

Running head: OPTIMISM AND LIFE SATISFACTION

Think Positively and Feel Positively:
Optimism and Life Satisfaction in Late Life

LEUNG Wai-Chung

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Philosophy
in
Psychology

Chinese University of Hong Kong

July 2001

The Chinese University of Hong Kong holds the copyright of this thesis. Any person(s) intending to use a part or whole of the materials in the thesis in a proposed publication must seek copyright release from the Dean of the Graduate School.



Acknowledgements

First, I would like to express my deepest gratitude to Prof. Catherine McBride who has helped me gone through the most difficult period of time in my fruitful graduate school life. Without her sincere and unfailing support, this study will not be finished. Prof. Giovanni Moneta, my supervisor who has continuously guided me in the research process and has provided me with infinite encouragement and motivation, certainly deserve my deepest thanks. His way of thinking, optimistic attitude and humor always inspired me in my research and my life. I am grateful to Prof. J.J. Lee. for his valuable comments on a draft of this thesis. His kindness often touches me. I also want to express my thanks to my external examiner, Prof. Asakawa, for his insightful comments and detailed responses. Moreover, my deepest appreciation goes to the researcher assistants, staff of the elderly centers and all of my lovely participants in this study, without their unconditional support and help, it is impossible to have this study finished. My friend---Mike Cheung, who always provide me insightful statistical advice and emotional supports, worth my deepest appreciation. I also need to thanks my other friends, Yeung Pui Lam and Candice Leung who always accompany with me and provided me infinite support through the internet when we were burning our mid-night oil during the hardest time. I especially owed my parents because they not only endure my long term absence in my family during but also teach me how to be optimistic, free and happy. Finally, I would like to especially mention my grandfather, who had leave us and returned to the paradise during the time of my graduate study. Just like my parents, his optimistic attitude always act as our model.

Abstract

This study developed and tested a path model of life satisfaction in Hong Kong Chinese elderly. Thirty-two males and 85 females Chinese elderly (mean age = 73.04; S.D. = 7.38) were recruited in local elderly activity centers as participants. The Satisfaction with Life Scale and the Delighted-Terrible Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985; D-T Scale; Andrews & Withey, 1976), and the Life Orientation Test-Revised (Scheier, Carver & Bridges, 1994; Lai, Cheung, Lee & Yu, 1998) were used to assess life satisfaction and dispositional optimism, respectively. In the first part of the study, a pancultural model of life satisfaction of college students, developed by Kwan, Bond and Singelis (1997) was validated. Life satisfaction was significantly predicted by self-esteem and relationship harmony, which in turn were predicted by independent and interdependent self-construals, respectively. In the second part of the study, optimism was found to contribute simultaneously to life satisfaction with self-esteem and relationship harmony. In the third part of the study, self-perceived health and financial conditions were not only found directly to predict life satisfaction, but they also found mediated the effect of optimism on life satisfaction. On the whole, this study indicates that dispositional optimism is a key contributor to the subjective well being of Hong Kong elderly. The implications of these findings to social work intervention are discussed.

摘要

此研究於香港華人長者的樣本中，測試及發展一個生活滿足感的路徑模型。參與者來自五間老人活動中心，共 117 名長者 (32 男; 85 女)，平均年齡為 73.04 歲(標準差為 7.38 歲)。我們以 Diener, Emmons, Larsen & Griffin (1985) 的生活滿足感量表(The Satisfaction with Life Scale; SWLS) 及 Andrews & Withey, (1976) 的極好-極差量表(The Delighted-Terrible Scale; D-T Scale) 來評估研究對象的生活滿足感，又以 Scheier, Carver & Bridges, (1994) 及 Lai, Cheung, Lee & Yu, (1998) 的生活取向量表-修訂版 (The Life Orientation Test-Revised) 來量度樂觀度。於研究的第一部份中，我們驗證了由 Kwan, Bond 及 Singelis (1997) 所提出的大學生生活滿足感泛文化模型。研究結果証實，獨立與相依的自我概念能分別預測自尊心及關係和諧度，而後者又直接影響生活滿足感。第二部份的研究結果亦顯示，樂觀度能同時影響生活滿足感、自尊心及關係和諧度。於研究的第三部份中，我們發現，自我評估的健康及財政狀況不但能直接影響生活滿足感，且亦能調節樂觀度對生活滿足感的影響。整體來說，此項研究反映，對於香港長者的主觀福祉來說，樂觀度是個關鍵的影響因素。最後本文亦論及這些研究發現對社會工作的啟發及影響。

Table of Contents

ACKNOWLEDGMENTS	2
ABSTRACT	3
TABLE OF CONTENTS	5
INTRODUCTION	6
PART 1 VALIDATION OF PANCULTURAL LIFE SATISFACTION MODEL	8
PART 2 INCORPORATING OPTIMISM IN THE LIFE SATISFACTION MODEL	21
PART 3 INVESTIGATION OF MEDIATING EFFECT OF HEALTH & FINANCE	32
CONCLUSIONS & IMPLICATIONS	41
REFERENCES	44
FOOTNOTES	57
LIST OF TABLES	65
TABLE 1 TO TABLE 8	66
FIGURE CAPTIONS	77
FIGURE 1 TO FIGURE 4	78
APPENDIX 1	82
APPENDIX 2	83

Think Positively and Feel Positively: Optimism & Life Satisfaction in late life

Is happiness acquired by learning, or habituation, or cultivation? Or it is the result of some divine fate, or even of fortune? it would be seriously inappropriate to entrust what is greatest and finest to fortune.

Aristotle, Nicomachean Ethics,

Book 1, Chapter 9

One of the major dreams of psychology is to facilitate human development and foster productive and satisfactory lives (James, 1958; June, 1933; Maslow, 1962, 1970). However, this mission seemed to be relatively ignored in the field of traditional psychology. A considerable research effort has been invested in dealing with pathology, impairment and weakness, leaving the positive potentials of human development and existence unrevealed (Argyle, 1988; Seligman, 1998; Seligman & Csikszentmihalyi, 2000). The number of published psychological papers since 1887 examining negative states was about 14 times more when compared with those investigating positive aspects (Myer, 2000; Myer & Diener, 1995).

Fortunately, however, more and more researchers have recognized that psychology is not just the study of impairment and disorder; it is also a study of strength, virtue and well being (Seligman et al, 2000; Kahneman, 1999). The concept of Positive Psychology has become more and more popular among different areas of psychology (Seligman et al 2000, Kahneman, Diener & Schwartz, 1999). An electronic search of *Psychological Abstracts* across the recent three decades, from 1971 to 2000, revealed that, although the absolute number of articles containing negative keywords outnumbered those mentioning positive ones, the ratio was shrinking¹.

Psychology, as a discipline, will not find itself alone in this revolution (shift its attention from impairment-related aspects to positive potentials of human being). Similar to traditional psychology, gerontology previously focused primarily on age-associated cognitive and physiological losses and disease-related phenomena (Rowe & Kahn, 1987). However, this picture changed significantly with the proposal of the groundbreaking concept of successful aging. This concept emphasizes positive influences of development in late life and the importance of potential moderators of the aging process (Rowe & Kahn, 1987, 1997). It has not only opened up a new and more positive research framework for studies about aging but also redirected research attention from “impairment-related” areas to “health and well-being-related” ones (Abeles, Gift, & Ory, 1994; Baltes & Baltes, 1990; Garfein & Herzog, 1995; Hazzard, 1995; Rowe & Kahn, 1997).

As a consequence, different criteria and models have been proposed to define the construct of successful aging (Baltes & Baltes, 1990; Rowe & Kahn, 1997). Some adopted the medical perspective and define successful aging as absence of chronic illness and disability (Fries, 1990), while others took the performance-oriented criteria and defined people those who are physically and cognitively fit as successfully aged (Berkman, Seeman, Albert, Blazer, Kahn, Mohs, Finch, Schneider, Cotman, McClearn, nesselroade, Featherman, Garmezy, Mckhann, Brim, Prager & Rowe, 1993; Albert, Savage, Jones, Berkman, Seeman, Blazer & Rowe, 1995). However, these perspectives over-emphasized the importance of objective criteria and significantly ignored the subjective and psychological components of a good and successful late life. Fisher (1995) conducted interviews with 40 elderly, using the method of content analysis and revealed five fundamental features of successful aging. Four of them are psychological characteristics, namely a sense of purpose,

self-acceptance, personal growth and autonomy. Moreover, when the participants were asked about their perception of the relationship between successful aging and life satisfaction, the majority of respondents suggested that life satisfaction was a precursor to and foundation of successful aging.

As a result, a number of correlates for life satisfaction (LS) were investigated in recent years. Demographic factors including gender (Haring, Stock & Okun, 1984; Lucas & Gohm, 1999) and marital status (Diener, Suh, Gohm, Suh, & Oishi, 1998; Haring-Hidore, Stock, Okun & Witter, 1985), physical and medical conditions (Verbrugge, Reoma, & Gruber-Baldini, 1994) and social resources such as social network and support (Aquino, Russell, Cutrona, Altmaier, 1996; Chi & Lee, 1989; Lai & McDonald, 1995; Newsom & Schultz, 1996) were examined and significant relationships between these variables and LS were found (See review of Diener, Suh, Lucas & Smith, 1999). Nevertheless, empirical evidence examining the relationship between psychological resources, such as self-esteem, optimism and LS is relatively slim, especially in elderly (Lai & McDonald, 1995; Rodin & Timko, 1991; Abeles, 1991).

Therefore, the purpose of the present study is to investigate the effect of several fundamental psychological factors on life satisfaction and the interrelationships among them.

Goals of the study

The present study examined the effects of psychological factors on satisfaction with life in old age. The goals of the current work are as following. In the first part of this paper, we aimed at examining the underlying psychological mechanisms leading to life satisfaction by investigating the effects of psychological factors such as self-esteem and relationship harmony in a pancultural model of life

satisfaction. In the second part, we aimed at further developing and extending the model by incorporating another fundamental disposition-optimism. In particular, we aimed at investigating the effect of optimism on life satisfaction and its relationship with other psychological factors in the model. The third and last part investigates the differential effects of objective life conditions, such as health and financial problems. Subjective perceptions of such conditions on LS were evaluated, and the possible mediating effects of these variables on optimism were examined.

Part 1

Life satisfaction (LS) refers to a cognitive, judgmental process that involves “a global assessment of a person’s quality of life according to his chosen criteria” (Shin & Johnson, 1978; p.478). Life satisfaction is an important component of the broader concept of Subjective Well Being (Diener, 1984; Andrews & Withey, 1976).

A considerable body of gerontological studies investigating the relationship between different categories of factors and LS have accumulated in recent years. These studies can be divided into three different categories. The first type of research, which can be regarded as background-related studies, investigated the relation among demographic variables, objective life conditions and LS. Age and gender were consistently found to be nonsignificant factors in predicting LS when other conditions, such as health and income, were controlled (Shmotkin, 1990; Warr & Payne, 1982). Others have found that married persons appeared to live a happier life when compared with their unmarried, divorced and widowed counterparts (Diener, Gohm, Suh, & Oishi, 1998). However, since the predictive power of demographic factors is relatively weak, other categories of predictors were explored.

The second type of studies, the physical conditions-related studies, focused on examining the impact of physical and medical conditions on LS. Researchers found that LS was not only significantly predicted by objective physical and medical conditions, such as number of chronic illnesses, but also predicted by subjective self-reported health status (Hooker & Siegler, 1992; Watson & Pennebaker, 1989). However, few studies have been conducted to compare the relative importance of objective and subjective health-related variables in predicting LS.

The third category of studies focused on the influence of social resources. In particular, social work researchers investigated LS from a more social and interpersonal perspective. However, only a few studies have examined the more subjective components of relatedness such as satisfaction with relationships and degree of harmony in these interpersonal ties (Leung & Leung, 1992; Michalos, 1991; Diener & Diener, 1995).

Nevertheless, these subjective components should not be ignored because objective social indicators, such as crime statistics, income level and marital status, are not sufficient to define quality of life (See review of Diener, Suh, Lucas & Smith, 1999; Diener & Suh, 1997). The psychological characteristics of the person, that is, their unique expectation, value and subjective perception of the past and present as well as anticipation of future events need to be considered (Costa & McCrae, 1980; McCrae & Costa, 1991). Furthermore, objective factors, such as demographic variables and physical health status are less susceptible to intervention, training or modification when compared to psychological factors such as self-esteem and locus of control. That is, psychological factors have a better potential to be enhanced through interventions and training in late life.

Pancultural model of Life Satisfaction

With the aforementioned background, therefore, a pancultural psychological model of life satisfaction was adopted as the basic model for the present study (Kwan, Bond & Singelis, 1997) (See Figure 1). This model, tested on college students in the United States and in Hong Kong, included two fundamental psychological pathways leading to life satisfaction. The first pathway leading to life satisfaction passes through self-esteem, defined as an individual's evaluation of his or her own personal value and sense of worth (Rosenberg, 1965). In Kwan et al's study, self-esteem was found to be a strong predictor of life satisfaction in both college student samples. The strong relationship between self-esteem and life satisfaction was found to be robust in the West and was replicated across many different cultures (Campbell, 1981; Diener & Diener, 1995; Taylor & Brown, 1988).

The second pathway leading to life satisfaction passes through a construct called relationship harmony, defined as a state of workable balance achieved in social relationships, is a core feature was a stable and agreeable network of mutual interpersonal supports (Kwan et al, 1997). Relationship harmony is different from personal satisfaction with social relationships because it emphasizes the characteristics of the relationship in itself and this is believed to be a better way to measure interpersonal relationships (Kwan et al, 1997; Diener & Diener, 1995; Leung & Leung 1992; Michalos, 1991). In other words, relationship harmony is an interpersonally oriented construct rather than an intrapsychic one. The degree of harmony is assessed in the 5 most significant social dyadic relationships. Relationship harmony was verified as an equally important psychological factor in predicting life satisfaction in Hong Kong Chinese college students when compared with self-esteem. This finding was supported by existing empirical evidence.

Goodwin and Tang (1996) found that harmony was considered a marker of happy marriage among Chinese couples and Lu and Shin (1997) found that harmony of interpersonal relationships was one of the nine sources of happiness for Chinese in Taiwan. As such, the degree of interpersonal harmony is an important factor in predicting happiness and life satisfaction especially in collective cultures in various Chinese societies.

Other reasons for choosing this model as the basic theoretical framework were as follows. First, the model is culturally invariant and parsimonious. However, this insightful model has not yet been validated in elderly samples, particularly in the Chinese culture. The current study may contribute to build up a cultural and age-invariant model of LS if the basic structure of it is confirmed. Moreover, it was also important to understand how different factors predict LS from an elderly perspective in order to get a more comprehensive picture of LS across different age groups.

Since the basic structure of self-construal was assumed to be invariant across age groups (Markus & Kitayama, 1991; Singelis, 1994) and the model has been validated cross-culturally using US and HK college students as samples, we hypothesized that the model would have a reasonably fit to a Chinese elderly sample. Moreover, since the two fundamental mediating variables, self-esteem and relationship harmony, leading to LS were included in the model (Campbell, 1981; Hogan & Emler, 1978; Taylor & Brown, 1988; Diener & Diener, 1995; Kwan et al, 1997), we predicted that the model would have a moderate accountability for LS in the elderly. That is, although the model might account for only a moderate proportion of percentage of variance of LS, its basic structure would be validated in our sample.

However, we speculated that there would be one modification in the model. The relative importance of relationship harmony (RH) and self esteem (SE) would be different from the one derived in American and Hong Kong² college students (Kwan et al, 1997). Kagitcibasi (1995) argued that there is a comparatively greater emphasis on interpersonal relationships than on self-directed accomplishments in collectivist cultures. Moreover, clear and concrete career goals and ambition for personal accomplishments are less stressed in late life than in youth (Hooyman, 1996; Atchley, 2000). Concerns and goals in late life may be primarily focused on achieving interpersonal accomplishments and remaining harmonious with significant others (Hooyman, 1996; Atchley, 2000). Moreover, the elderly may be less westernized than youth in Hong Kong. That means they may still bear more traditional, collective-cultural values than the youngsters. Therefore we hypothesizes that RH would exert a relatively greater impact on life satisfaction than SE for Chinese elderly in Hong Kong.

Method

Participants

Participants were recruited from five local elderly activity centers. Posters introducing the nature and content of the study were posted in the elderly centers. Members of the elderly centers who were interested in participating were told to contact the staff of the centers. Moreover, the experimenter introduced the research in the monthly member meetings organized in the centers. Interested elderly were invited to sign up after the meetings. The basic selection criteria were community dwelling seniors aged 55 and above. Elderly with physical impairments such as

hearing or seeing problems and any cognitive deficits, such as dementia or psychiatric symptoms, were excluded from the study.

The sample consisted of 32 male and 85 female seniors from 56 to 89 years of age (mean = 73.0 years; $SD = 7.4$). Two participants were younger than 60. Fifty-six participants (48 %) were married, 7 (6.0%) were single, 5 (4.3%) were divorced, and the remaining 47 (40%) were widowed. Table 1 summarizes the demographic information of the sample. There were no gender differences across any of the demographic variables except for marital status and level of education. Male participants were more likely to be married at the time of the interview. This may be explained by the fact that males tend to have shorter life expectancies than their female counterparts and, therefore, there is a higher percentage of females that become widows (Yeung & Chow, 2000). Almost 30% of the participants had received no formal education. The mean years of education received for males and females were 5.85 and 2.97, respectively. This gender difference was significant ($t(112) = 3.54; p < .001$). About one-third of them were living alone and the rest were living with their spouse, children or friends. Close to one-third of the participants had religious beliefs. When asked about their major sources of financial support (participants could check more than one source), about 30 % of the respondents reported that they were financially independent, while 68 % and 54% of them, respectively, reported that the family and the Government were their major sources of income. Postgraduates and undergraduates were recruited as field workers to conduct the interviews and trained before they started the data collection.

Procedure

Structured face-to-face interviews were conducted in the elderly centers where the participants were recruited. The procedure and content of the interview was first introduced and explained to the participant by the field worker. Informed consent was obtained before the interview began (See Appendix 1). A comprehensive questionnaire, which consisted of various psychosocial and behavioral scales, was administered (See Appendix 2). Demographic information, such as age, gender, level of education, marital status, living conditions as well as religious affiliation, of the participants was also gathered. The interview lasted one hour on average. Each participant was given a souvenir in order to acknowledge his or her voluntary participation in the study after the interview.

Instruments

Satisfaction with Life Scale. The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985), which consists of 5 items assessing global judgement about one's quality of life (e.g. "I am satisfied with my life"), and the Delighted-Terrible Scale (D-T Scale; Andrews & Withey, 1976), which contains a single item (i.e., "How do you feel about your life as a whole?") were combined to assess life satisfaction. The two scales have been widely used and well-validated in different samples and cultures (Diener & Suh, 2000; Pavot & Diener, 1993) and have shown high internal consistency and temporal stability (Diener et al, 1985; Pavot & Diener, 1993). Responses were made on a 7-point Likert scale for the two scales with anchors of 1 (strongly disagree) to 7 (strongly agree) for the SWLS and anchors of 1 (terrible) to 7 (delighted) for the D-T scale. The ratings of the six items were summed up and averaged to obtain the score for LS. The two scales of LS were

significantly and moderately correlated ($r = .47$; $p < .001$). The Chinese version of the scale has been used in other studies (Choy & Moneta, in press).

Self-Construal Scale. The Self-Construal Scale consisted of two orthogonal subscales that were aimed at assessing the strength of independent and interdependent self-construal (Markus & Kitayama, 1991; Singelis, 1994). Items used in the present study were adopted from the study of Singelis (1994). However, some of the items in the original scale were not applicable to the life situation of elderly (e.g., “Speaking up during a class is not a problem for me”). Moreover the wordings of some items were difficult for the elderly to understand (e.g., “It is important for me to maintain harmony within my group”). Whenever the items were found to be inapplicable, they were dropped and whenever the wordings of the items were found to be inappropriate, they were changed (e.g. “my group” was changed to “my family or friends”). Finally, twenty-one items were selected, with 8 items measuring the Independent-Self-Construal subscale (e.g. “I try not to depend on others”) and 13 items measuring the Interdependent-Self-Construal subscale (e.g. “I consult with others before making important decisions”) (See Appendix 2). Responses were made on 7-point Likert scales for the two subscales with anchors of 1 (strongly disagree) to 7 (strongly agree).

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (SES) (Rosenberg, 1965), is a widely used scale with high construct validity and internal consistency (Rosenberg, 1965, 1979; Yik, Bond & Paulhus, 1998; Li, 1998). It consists of 10 items assessing one’s global, personal self-esteem (e.g. “I feel good about myself”) expressed on a 4-point Likert scale with anchors of 1 (strongly disagree) to 4 (strongly agree). In order to reduce the likelihood of an acquiescence response bias, 4 items were designed, structured, and scored in reverse direction.

The Chinese version of the SES (Wang, 1993), that excluded the item (“I wish I could have more respect for myself”) which is found to be syntactically problematic in Chinese (Cheng & Hamid, 1995), was used.

Interpersonal Relationship Harmony Inventory. The degree of an individual’s achieved relationship harmony was assessed by the inventory developed by Kwan and colleagues (1997). Participants were asked to specify the target’s name, gender and relation for each of the five most significant dyadic social relationships in their lives. However, since many of the elderly refused to provide the full name of their targets, appellation of the targets normally used by the elderly were reported instead. Participants reported the degree of harmony portraying each relationship on a 7-point Likert scale ranging from 1 (very low) to 7 (very high). A relationship harmony score was then calculated by averaging the five relationship harmony ratings.

Reliability of the scales

Table 2 presents the descriptive statistics of the various psychological variables measured. Internal consistencies, measured by Cronbach’s alpha, of various scales were found to be satisfactory (from .71 to .79) except for the Self Construal-Independent subscale (.55). A factor analysis was performed to verify the factor structure of the scale for self-construals. Items, which were double-loaded (in the case of Self-Construal) as well as those, which yielded a negative item-total correlation, were discarded. As a result, two out of 8 items of the Independent Self Construal scale as well as 5 out of 13 items of the Interdependent Self Construal scale were discarded.

Statistical Analysis

Before more complicated statistical analyses were performed, hierarchical multiple regression analysis for demographic variables predicting LS was performed. This analysis enabled the researchers to evaluate the effects of these variables on LS.

Path analysis involves the specification, estimation and revision of a causal hypothesized model. It is intended to reveal the underlying observed covariance among a set of measured independent variables and a target measured dependent variable (Wright, 1934; Bollen, 1989; Pedhazur, 1997; Munro, 2001). The EQS 5.7 program (Bentler, 1990), using maximum likelihood estimation, was used in the present study to conduct the path analysis and the structural equation modeling. In the process of model modification, the Wald test and the Lagrange Multiplier (LM) test were consulted to exclude non-significant paths and include potential significant paths, respectively. Equal constraint was imposed to test whether the strengths of two or more particular paths were equal.

The Chi-square value (χ^2), Chi-square-degrees of freedom ratio (χ^2/df), nonnormed Fit Index (NNFI), comparative Fit Index (CFI); and root mean square error approximation (RMSEA) were selected to assess the goodness-of-fit of the models. By convention, a value of 2 or less for χ^2/df indicates reasonable fit. A value above .90 of the two fit indices (NNFI and CFI) indicates reasonable fit (Bentler, 1992). RMSEA is a measure of discrepancy of the data per degree of freedom. A value below .05 to .08 signifies a good fit (Pedhazur, 1997; Munro, 2001).

Results

Table 3 summarizes the results of the hierarchical multiple regression analysis of the demographic variables for LS. As predicted, most of the demographic factors, such as age and gender were found to be nonsignificant in predicting LS. This finding is consistent with existing research evidence that subjective well-being does not vary across age and gender (Diener et al , 1995; Shmotkin, 1990; Warr & Payne, 1982). Although marital status and level of education was found to be significantly related to LS, the predictive power of these variables was relatively weak. Only 5.6 % of variance of LS were explained by the model.

As seen in Table 4, LS was significantly and moderately correlated ($.36 < r < .50$; $p < .01$) with all psychological constructs except independent self-construal (IND). As theoretically hypothesized, the correlation between the two orthogonal subscales IND and interdependent self-construal (INT) was nonsignificant. There were two unexpected associations of interest. First, besides the theoretically hypothesized path between INT and RH, INT was also found to be significantly correlated with SE. Second, a significant link between SE and RH was found. This association is unique in the current sample and was not significant in previous samples of American and Hong Kong college students (Kwan et al, 1997). The overall pattern of the correlation provided preliminary support for the theoretically hypothesized relation among the constructs and further statistical analysis was warranted.

Goodness-of-fit of the model. The base model (Figure 1) reached statistical nonsignificance, $(6, N=117) = 9.384, p > .05$. This may be partially due to the small size of the present sample and the parsimonious nature of the base model. However,

we can see in Table 5 that there was still room for improvement for the model since the NNFI was less than .90 and the RMSEA was higher than .08.

Exploratory Path. The Lagrange Multiplier (LM) test revealed that the goodness-of-fit of the base model would be significantly improved if the path from INT to SE was added. Model 2 was established to include this association and the result was confirmed. The χ^2 / df value dropped from 1.564 to .9555 and the fit indices increased to 1.00. RMSEA also dropped significantly from .084 to .00. Thus, the path from INT to SE should be retained. However, the LM test revealed that the path between SE and RH was nonsignificant. That is, there is no direct path from SE to RH or vice versa.

The relative importance of SE and RH. In order to test whether the two paths from SE and RH to LS were equal in strength, equality constraint on the strengths of the paths were imposed in model 3. Results revealed that such constraint did not significantly affect the fitness of the model. In other words, the strengths of the two paths can be considered as statistically equal.

Final model. Figure 2 shows the percentage of variance accounted for every dependent variable and the strengths of the paths in the final model. Since the strengths of two paths (SE and RH to LS) may be affected differentially when additional variables in parts 2 and 3 are added in the model, the equality constraint of the two paths was released in the final model. The final model accounted for 19.7 %, 14.5% and 22.7% of the variance of LS, SE and RH, respectively. The standardized coefficients for the paths from SE and RH to LS were .193 and .380 respectively. For comparison, the details of the final model as well as the model derived in the study of Kwan et al (1997) are summarized in Table 6. In both studies, the goodness-of-fit of fit of the models were satisfactory. The two fundamental pathways

leading to LS were also significant. However, there were some differences between the two models. First, the percentage of the variance of LS explained is much less for the model of this elderly sample when compared with that of the college student samples (20% Vs 42%). Second, the path between INT and SE was only found to be significant in elderly but not in college students. This may imply that the interdependent self-construal is more significant in predicting the psychological states of elderly when compared with those of college students.

Discussion

The pancultural model for LS developed by Kwan and colleagues (1997) was validated in the elderly sample of the present study. The model has a reasonable fit and its basic structure was preserved. Self-esteem and relationship harmony were independent significant predictors for life satisfaction in the current sample, while independent self-construal and interdependent self-construal were significantly related to SE and RH, respectively, as theoretically predicted.

Besides the theoretically derived paths, a new significant path was found. Interdependent self-construal was significantly associated with SE. The positive relationship between INT and SE implies that a higher level of interdependent self-construal is associated with a higher level of self-esteem. Self-esteem is a construct assessing an individual's evaluation of his/her own value and worth. As aforementioned, elderly are less focused on achieving personal or career-related goals but are more devoted to interpersonal accomplishment (Hooyman, 1996; Atchley, 2000). Therefore, it is logical that maintaining interpersonal relationships and achieving harmony with others results in a better evaluation of self worth and value. That is, a sense of worth is derived from interpersonal accomplishment and

harmony in late life. Another bit of support for this hypothesis was the weak but significant correlation ($r=.232$; $p<.05$) found between SE and RH in the current sample. This may be a unique characteristic of the elderly, since this correlation was nonsignificant in college students in the United States and Hong Kong (Kwan et al, 1997). However, this conjecture about the potential predictive power of INT to SE may need further investigation and replication.

In addition, the variance of LS explained by this model for the elderly was unexpectedly low. Compared with 42 % for college students, only 20 % of the variance of LS was accounted for by the model in the current elderly sample. Possible reasons for this phenomenon are listed below. First, the predictive power of SE on LS, as reflected by the value of the standardized coefficient (), was relatively weak for elderly when compared with the one for college students. This may be explained by the fact that SE is less important and significant in late life than in early adulthood (Hooyman, 1996; Atchley, 2000) Second, the variability for LS, SE and RH may be relatively small since the sample included relatively healthy, active and community dwelling elderly. This may limit the predictive power of SE and RH on LS in the present sample.

The relatively small proportion of variance accounted for by the model implies that there are some other, unknown potential predictors of LS in the Hong Kong elderly. Therefore, a potential psychological variable of LS, optimism, was proposed and examined in Part 2. The effect of optimism, a fundamental concept in positive psychology and a potential predictor for LS in late life, was therefore examined in the second part.

Part 2

Optimism as fundamental human nature

Evolutionary psychologists have claimed that Optimism (OP) is one of the fundamental and adaptive characteristics of human beings that emerges in the process of evolution (Buss, 1991). Tiger (1979) proposed that OP appeared when people began to anticipate the future and started thinking ahead. He speculated that OP was developed along with other cognitive capacities of human beings and carried a significant survival value in the process of evolution. Optimism, Tiger argued, counteracted the fear and anxieties experienced when people anticipated future events and death in particular.

Research from different approaches provides direct or indirect empirical evidence to support the claim that OP is a fundamental aspect of human nature. Matlin and Stang (1978) have summarized hundreds of studies in the field of cognitive psychology and concluded that most people have a natural positive bias in their language production, memory retrieval in free recall and self-evaluation. They also found that the majority of people tend to have a positive judgment about their own future happiness. This positive bias seems to even exceed the positive evaluation about their own present and past situation: "That is, even though people seem quite happy today, most of them believe they will be even happier tomorrow." (Matlin and Stang, 1978; p.160). Moreover, psychologically healthy people were found to adopt more positive coping strategies in coping with stress, and such a tendency was associated with well-being during difficult times (Lazarus, 1983; Peterson, 2000; Harju & Bolen, 1998; King, Rowe, Kimble & Zerwic, 1998). In contrast, Beck (1967) found that people suffering from depression have illogical characteristics and negative biases in information processing, self-evaluation, evaluation of experiences, and anticipation of future events. In Beck's view, mental disorders such as depression basically are cognitive disorders. Psychological well-

being can be regained by amending their irrational thoughts and negative biases towards rationality and positively (Beck, 1967, 1991). To summarize these findings, psychologically well-adjusted and well-functioning persons have a positive tendency in their appraisal of themselves and their environment, especially in the anticipation of future events. These findings support the claim that OP is one of the fundamental characteristics of human nature and highlight the survival significance of OP in human development (See review of Peterson, 2000).

Definition of Optimism

Researchers approach the study of OP by adopting different definitions. Interestingly, all of these approaches somehow involve cognitive components in their definitions. Two lines of research are summarized here. The first is derived from studies on learned helplessness and explanatory style, and the second is derived from studies on dispositional optimism, which is defined as generalized positive expectancy about the future.

Seligman and his colleagues adopted the concept of individual explanatory style to define OP. Those who tended to explain bad events with external, unstable and specific causes were depicted as optimistic while those who were inclined to explain bad things with internal, stable and general causes were described as pessimistic (Buchanan & Seligman, 1995; Peterson, 2000; p.47). This line of research emerged from the study of learned helplessness. Researchers suggested that people may learn to become helpless after experiencing an undesirable event if they believe that there is no contingency between the actions and the outcomes (Peterson, C., Seligman, M. E. P., Yurko, K. H., Martin, L. R., & Friedman, H. S. 1998; Peterson & Park, 1998; Maier & Seligman, 1976). This “learning” process involves

generalized expectancies that future outcomes are unrelated to one's actions (Peterson, 2000). In this process, a generalized expectancy or belief of response-outcome independence is established. This generalized expectancy leads to future undesirable behaviors or emotions such as withdrawal and depression.

In line with this research, Scheier and Carver (1985) developed a scale called the Life Orientation Test to assess OP. They defined OP as a global tendency to believe that one will generally experience good vs. bad outcomes in life (Scheier & Carver, 1985). They also speculated that this generalized expectancy and positive future orientation about life was relatively stable across time and contexts. This definition emphasizes the cognitive component of positive expectancy and orientation about the future as the core characteristic. With this operational definition in mind and validated scale (LOT) in hand, researchers set out to investigate whether this generalized positive expectancy would bring positive effects to various outcome variables including health, physical and psychological well-being, stress, coping, and adjustment in life.

Beneficial effects of Optimism---empirical evidence

Numerous studies have demonstrated the beneficial effects associated with OP. These studies can be classified into two categories. Medical studies, which involved investigations of the effect of OP on health and physical functioning, form the first category. Scheier and Carver (1985) found that OP was associated with fewer physical symptoms manifested in undergraduates during a stressful academic period (4 weeks before graduation). Converging findings were also found in clinical studies. Optimistic patients were found to have faster rates of recovery after surgery. For example, they were generally faster to achieve behavioral milestones of recovery

(such as sitting on the bed) and to resume their normal life after surgery than their pessimistic counterparts (Scheier, Matthews, Owens, Magovern, Lefebvre, Abbott & Carver, 1989). Moreover, OP was also found to be related to health-enhancing or health-promoting habits in patients with coronary heart disease (Scheier, Matthews, Owens, Magovern, & Carver, 1990; Maroto, Shepperd, and Pbert, 1990) and AIDS (Taylor, 1991) and in undergraduates (Robbins, Spence, & Clark, 1991). On the contrary, pessimism was found to promote disease (Antoni & Goodkin, 1988) and to be an important risk factor for mortality among young adult cancer patients (Schulz, Bookwala, Knapp, Scheier, & Williamson, 1996)

The second category of research investigated the effects of OP on psychological functioning. Researchers found that people who scored higher in OP had better adjustment to life changes, such as adjustment to college life (Aspinwall & Taylor, 1990), and more effective coping with stressful events, such as unemployment (Lai & Wong, 1998) and risk of developing AIDS (Taylor, 1991). Moreover, optimism also significantly predicted psychological and emotional well being. Carver and Gaines' (1987) prospective study found an inverse association between OP measured at delivery and depression assessed at 3 weeks postpartum. Optimism was also significantly and negatively related to depressive symptoms and psychological distress (Chang, 1998; Schweizer, Beck, Alexandra, Schneider, 1999; Boland & Cappeliez, 1997; Marshall & Lang, 1990) and positively related to quality of life (Harju et al, 1998) in normal populations.

Despite the rich empirical evidence documenting the beneficial effects of OP on health, physical, and psychological well being, relatively little attention has been paid to the interrelationship of OP with other psychological variables, such as self-concepts, traits, and self-esteem (Peterson, 2000). This gap in the literature has

hindered research to understand the psychological determinants and potential underlying mechanisms of OP in the elderly.

Hypothesized interrelationship of OP with other psychological variables

From Optimism to Life Satisfaction

Besides the positive and significant association found between optimism and psychological functioning in general, studies have also verified that OP predicts life satisfaction directly. Most of these studies were conducted on samples of college students (Chang, 1998; Chang, Maydeu, D’Zurilla, 1997) and adults (Schweizer, Beck, Schneider, 1999). Evidence on the relationship between OP and LS in elderly is relatively slim (Rijken, Komproe, Ros, Winnubst, & Heesch, 1995; Boland & Cappeliez, 1997). Based on the accumulated literature, we hypothesized that a significant positive association exists between OP and LS.

From Optimism to Self-Esteem

Studies have showed that OP is related to a variety of psychological characteristics such as personality traits, including more extroversion, less neuroticism, and less trait anxiety (Robbins Spence, & Clark, 1991; Smith, Pope, Rhodewalt, & Poulton, 1989); higher Self-mastery (Marshall & Lang, 1990); and an internal locus of control (Guarnera & Williams, 1987; Peacock & Wong, 1996; Mckenna, 1993; Scheier & Carver, 1985). To summarize, OP is generally positively and negatively associated with desirable and undesirable dispositions, respectively. Therefore, it is reasonable to predict that OP is related to a more positive self-evaluation, and sense of self-worth, and that these eventually lead OP to a higher score in self-esteem (Aspinwall & Taylor, 1990; Scheier & Carver, 1985).

From Optimism to Relationship Harmony

OP was also found to have effects on social functioning. Optimistic persons not only showed higher satisfaction with their level of social support (Fontaine & Seal, 1997) but also actually reported receiving more social support than their pessimistic counterparts (Scheier et al 1989). Besides passively getting more help and support from others, optimistic persons were also more ready to seek social support for managing their problems when necessary (Scheier et al, 1986). Moreover, researchers found that undergraduates who scored higher in optimism (with a more optimistic outlook), when compared with undergraduates who scored lower in optimism showed more social acceptance of their peers. Based on this evidence, we speculate that the optimistic elderly in our sample would report higher relationship harmony with significant others.

From Optimism to Self-Construal

Although, self-construal and optimism were both described as fundamental aspects of human nature by different researchers (Kitayama & Markus, 1991; Kwan et al, 1997), there were not much study investigating the relationship between these constructs (Heine & Lehman, 1995; Chang, Asakawa & Sanna, in Press). In these studies, researchers found that cultures typically emphasized independent self (e.g. Canadians) would have enhanced unrealistic optimism. On the other hand, cultures that typically stressed interdependent self (e.g. Japanese) would have lower levels of unrealistic optimism. Therefore, we hypothesize there is a weak positive and negative relationship between optimism and independent and interdependent self-construals respectively.

Method

Participants

The participants were the same in all three parts of the present study.

Instrument

Life Orientation Test-Revised. The revised Life Orientation Test (LOT-R), developed and validated by Scheier, Carver and Bridges (1994), was used to measure optimism. This Revised Version of LOT consists of 3 positively worded (e.g., "In uncertain times, I usually expect the best"), 3 negatively worded (e.g., "I hardly ever expect things to go my way") and four filler items (e.g. "I enjoy my friends a lot"). Responses were scored on a 5-point Likert scale with anchors of 1 (strongly disagree) to 5 (strongly agree). Negative items were reversed and recoded. The six item scores were totaled and averaged to generate the mean score of Optimism. A higher score represented more optimistic attitudes, while a lower score represented more pessimistic attitudes. The LOT-R was translated into Chinese and its psychometric properties were verified in a sample of Hong Kong Chinese undergraduates (Lai, Cheung, Lee, & Yu, 1998). In this study, a one-factor model, instead of a two-factor model, of optimism was found to be represented by the Chinese LOT-R. Internal consistency of the Chinese LOT-R was .70 in college students (Lai et al, 1998) and .65 in secondary school students (Leung, 1999). However the internal consistency for the present elderly sample was not very satisfactory (.46). Therefore, a detailed reliability analysis was performed. Three out of 6 items were found to be unreliable. Cronbach's alpha was increased to .68 when these three items were deleted. These three items came from the subscale of pessimism. The reason for its relatively low reliability when compared with that of optimism is unclear. A possible explanation is that the items in the subscale of pessimism included double

negative phrases, which increases the semantic complexity and may make the items difficult to be comprehended (Lai, 1997; Lai, Cheung, Lee, & Yu, 1998). However, in order to maintain the coherence of the scale and the generalizability of the results all of the six items were kept in calculating OP. Table 3 presents the descriptive statistics of optimism.

Procedure

The procedure was the same in all three parts of the present study.

Results

Table 4 shows the correlation of OP to other psychological variables in the model. Optimism was significantly and moderately associated with LS, SE and RH but not with self-construal (SC). This pattern converged with the hypothesis and it warranted further statistical analyse.

The overall goodness-of-fit of the base hypothesized model was not very satisfactory. We can see in Table 7 that all of the fit indexes indicated only a moderate goodness-of-fit of the model. For example the value of NNFI was less than .80 and that of RMSEA was even higher than .10. The Lagrange Multiplier (LM) test revealed that the fitness of the base model would be significantly improved if the path from OP to SE was added. Model 2 was thus established to test this speculation and the result was confirmed (See Table 7). The goodness-of-fit improved significantly as reflected by the increase of NNFI from .787 to .888. Furthermore, the LM test revealed that the fitness of the model could still be significantly improved if the path from OP to RH was added. Model 3 was therefore established and tested. The hypothesis was verified. The χ^2 / df value of this final model dropped from 1.476 to .963 and the fit indices increased to 1.00. RMSEA also

dropped dramatically from .078 to .00. All the indicators reflected that this final model had an excellent fit. However, no significant path was found between OP and SC. Figure 3 presents the finalized model for Part 2 together with the path coefficients and percentage of variances explained for every dependent variable. The final model accounted for 24.0 %, 20.1% and 26.9 % of the variance in LS, SE and RH, respectively. The accountability of the finalized model for every dependent variable in Part 2 increased (about 5 %) when compared to the model in Part 1.

Discussion

In Part 2, as hypothesized, OP was correlated directly and significantly with LS, SE and RH but not with SC. This optimistic elderly in the present study were found to be more satisfied more with their life, to have higher self-esteem and to have more harmonious relationships with their significant others. The overall goodness-of-fit of the model was excellent.

From Optimism to Life Satisfaction

The elderly who scored higher in OP were found to be more satisfied with their lives. This result may be explained from different perspectives. Similar to other stages in life, old age is also full of changes, including physical, psychological or social aspects (Hooyman, 1996; Atchley, 2000). Some of these changes, may be ego harming or stress-inducing in nature such as the decline of social significance of the elderly or death of a spouse (Hooyman, 1996; Atchley, 2000). The optimistic elderly may emerge from these difficult events with less distress than the pessimistic elderly. They may adopt more effective coping strategies and constructive means to solve their problems (Harju & Bolen, 1998; King et al, 1998). They may also use a more

self-protective attribution style to explain their undesirable life events so as to defend their ego and prevent falling into the trap of depression. In addition, elderly who scored high in OP may be less neurotic and more capable in their emotional regulation (Williams, 1992; Robbins et al, 1991; Smith, et al, 1989). They may also experience more positive affect and less negative affect when compared with those who scored low in OP. This positively biased emotional experience in their life may in turn differentiate the different levels of satisfactions with their lives (Chang, Maydeu, & D' Zurilla, 1997).

From Optimism to Self-Esteem

Since optimistic persons have a positive orientation towards their lives and they expect good things will happen in the future, they may evaluate and judge the uncertainties in their lives in more positive ways (Scheier & Carver, 1985). Therefore it may be plausible to claim that they also tend to evaluate their present selves more positively and less critically since they may believe that their potential self will become better in the future. Research has demonstrated that optimism is significantly associated with more hope for future potential and thus foster more motivation for continuous investment of efforts and personal-growth (Synder, 1994). Moreover, the optimistic elderly may also selectively set more reasonable and achievable goals in their late life and more readily foster a sense of purpose in their daily living (Synder, 1994). Furthermore, studies have shown that people who scored higher in OP were more ready to accept reality (Scheier, Weintraub, & Carver, 1986; Taylor, 1983; Taylor, Collins, Skokan, & Aspinwall, 1989). Therefore, the optimistic elderly may feel more comfortable in accepting the losses in their physical, social, and cognitive capacities in late life and, in turn, suffer less psychological consequences to their ego when these losses really happen. All these strategies may

enhance one's sense of worth, protect ones' ego and, in turn, lead to higher self-esteem.

From Optimism to Relationship Harmony

In personality research, optimism was found to correlate positively with extroversion and negatively with neuroticism of a person (Williams, 1992; Robbins et al, 1991; Smith, et al, 1989). Therefore, optimistic persons can be regarded as more sociable and emotionally more stable. Moreover, they also provide help to others more actively and seek support more readily when needed (Scheier, 1986, 1989). They tend to be more persistent in social encounters and interactions as they may stay involved in social relations since they expect positive feedback will come in the future even if the present situation is not that desirable. These positive relationships between OP and personality can explain why the optimistic elderly were found to have more relationship harmony with their significant others.

These findings are of fundamental theoretical significance. First, OP was found to predict higher sense of worth measured by self-esteem and degree of feeling harmonious with significant others. This somehow provides empirical evidence to support that the concept of OP has inherent emotional components. Moreover, OP was found to be another independent building block, in addition to personality and self-construal of human nature that opened up a new and unique pathway leading to life satisfaction. This global expectancy and belief that one will generally experience good rather than bad events in the future appears to contribute fundamentally toward life satisfaction in the late stages of life.

In this part of the study, OP was successfully incorporated in the model of LS, which we have validated and established in Part 1 (refer to Figure 2). This fact can be reflected by the overall goodness-of-fit of the model, as indicated by the values of

all the fitness indexes, and the significant associations between OP and other psychological variables measured in the model. (Refer to Figure 3). However, unlike the two dimensions of self-construal, the effect of OP on LS of the elderly was not completely mediated by the two psychological variables, SE and RH, in the model. That is, the direct effect of OP on LS remained significant even after the mediation of the two variables. Moreover, although the accountability of the model in Part 2 has been improved (the % of variances explained for every dependent variable has been increased by 5 % in average) when compared with that of Part 1, only 24 % of variance of LS was explained by the current model. This fact become more obvious when the accountability of the present model, derived from the elderly sample, is contrasted with the model derived by Kwan and colleagues (1997) from college students (42% of variance of LS explained). These two findings, the significant direct effect of OP on LS together with the relatively low % of variance of LS explained by the model, have two implications. First, there may be some other underlying factor or mechanism that can mediate the effect of OP on LS and second, there may be some other potential variable that can directly predict LS in the elderly. Therefore, the effects of two fundamental aspects, health and financial condition of the elderly were explored. These factors were examined to see if they could directly predict LS of the participants and indirectly mediate the effect of OP on LS.

As opposed to our hypothesis, no significant relationship between optimism and self-construal was found. This may be explained by the fact that the different definitions of optimism were adopted in the past and the present study. In Heine et al (1995), unrealistic optimism was defined as “the tendency for people to believe that they are more likely to experience positive events, and less likely to experience negative events, than similar others” (Weinstein, 1980, Heine et al, 1995; p.596). It

focused at comparing ones chances of experiencing positive and negative events with other people. Also, the unrealistic optimism defined in their study was assumed to be motivated by the threat of negative events to ones' own ego (self-construal) and the unrealistic optimism defined emphasized invulnerability towards these threats (Heine et al, 1995). On the other hand, optimism was defined, as a global tendency to believe that one will generally experience good vs. bad outcomes in life. They also speculated that this generalized expectancy and positive future orientation about life was cognitively based and should be relatively stable across time and contexts (Scheier & Carver, 1985). That is, this definition did not emphasize comparing their life orientation with other people and did not especially emphasize the threat of possible negative to towards ones' self. Therefore, with the above reasons, optimism defined in the present study may not linked with self-construal as previous study suggested.

Part 3

In 1967, Warner Wilson, a pioneer researcher in the field of subjective well-being, published a review about factors that made people happy (Wilson, 1967; Diener, Suh, Lucas & Smith, 1999). In his paper, Wilson described what a typical happy person would be like. He concluded that a happy person is "a young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, job morale, modest aspirations, of either sex and of a wide range of intelligence" (p.294) (Wilson, 1967; Diener et al, 1999). Numerous research efforts have been invested to test and verify the conclusion made in Wilson's review (For a comprehensive review, see Diener et al, 1999). In Part 1 of the present study, we investigated the effects of certain demographic factors on LS in

late life. We found that age, gender, living conditions (living alone Vs living with others) and religion was not significantly related to the LS of our participants. Even though the level of education as well as marital status were significant predictors of LS, their accountability for LS was relatively low (refer to Table 1). We have also verified the claim that optimistic persons, as well as those with high self-esteem and degree of harmony in their significant social relationships, were more satisfied with their life in Part 2.

In this part, other predictors that were supposed to relate to LS and may potentially mediate the effect of OP, were examined. Physical health and financial conditions are two variables among those mentioned in Wilson's review (1967) that have received more attention in the literature on gerontology (Yeung & Chow, 2000; Diener et al, 1999). Existing empirical evidence demonstrated that objective physical health status as well as subjective perception of one's health was associated with satisfaction with life (Bowling et al, 1993; Girzadas et al, 1993; Liang, Levin & Krause, 1989). To be more specific, both functional capacities and number of chronic illnesses, which reflect objective physical health conditions, and self-reported health status, which reflects subjective perception of health, were found to correlate significantly with LS. Similarly, financial conditions, either measured objectively by the income level of the person or measured subjectively by one's own perception of financial strain also significantly predicted LS in elderly (Chi & Gray, Ventis, & Hayslip, 1992, Krause, 1991, 1993, Usui, Keil & Durig, 1985; Chou & Chi, 1999).

However in the studies mentioned above, two significant points were overlooked. First, little research has incorporated objective as well as subjective measures of physical health and financial conditions in the same study. That is, very

few efforts have been made to compare the relative contributions of objective and subjective measures of health and financial conditions (Kammann, 1983; Brief, Butcher, George, & Link, 1993; Chou & Chi, 1999; Krause, 1991, 1993). Second, in measuring subjective health and financial conditions, researchers have often focused on current status, ignoring future expectations and worries. The uncertainties and worries about future health status (e.g., a sudden drop in physical health) and financial conditions (e.g., a cut of subsidies from the family or government) may induce a great stress and negatively affect the elderly's emotional well being. Therefore, we incorporated items that tapped expectations in addition to perceptions of their current situation. We speculated that, with this additional future-oriented and worried-related component, the subjective measures of health and financial conditions in the present study would significantly predict LS in our sample.

Researchers have usually investigated the mediating effects of psychological cognitive or motivation-related factors, such as explanatory style and pattern of coping strategies, on optimism. Few studies have addressed whether some more basic or instrumental concerns such as perception and worries about current as well as future health status and financial conditions can mediate the effect of OP on LS. It is reasonable to speculate that the elderly who score high in optimism would have a more positive evaluation and fewer worry-related expectations about future health and financial conditions. The optimistic elderly may also have more positive perceptions about their current status on these two life concerns even if their objective conditions (health and finance) are similar to those of their pessimistic counterparts. Therefore, we further hypothesized that these subjective measures would mediate the effect of OP on LS in the elderly. That is, OP will significantly predict subjective health and financial status, which, in turn, will predict LS.

Method

Participants

The participants were the same in all three parts of the present study.

Measures

Objective assessment

Health Problem Checklist (HPC). This scale consisted of 18 health problems and illnesses that may be experienced by the participants (e.g. hypertension, heart disease; See Appendix 2). Respondents were asked to indicate whether they have experienced any of the health problems or illness in the last year.

Major sources of income. This measure of financial conditions comprised 3 items. Respondents were asked to indicate their major source of income. They were asked whether they were financially independent and whether money from their family members or the Government was their major source of income. Responses to these items was dichotomous (i.e. Yes or No). However, the three items were not mutually exclusive. That is, participants could report that family, as well as, the government was their major source of income.

Subjective assessment

Self-Reported Health Status (SRHS). Subjective perception of health conditions was measured by 3 items. The first item assessed the perception of their current general health status, in which responses were ranging from 1 (poor) to 5 (excellent). The second item assessed the subjective perception of their current health compared with that of one year ago, in which responses were scored from 1 (much worse than one year ago) to 5 (much better than one year ago). The third item tapped the perception of their future health status in one year time compared with the

present one, in which, responses were scored from 1 (much worse than present) to 5 (much better than present). The SRHS score was calculated by averaging the ratings obtained in the three items. The higher the score, the better the subjective perception of health will be.

Self-reported Financial condition (SRFC). Subjective perception of financial conditions was evaluated by 2 items. The first item asked whether they had enough money for their daily expenses, in which responses ranged from 1 (very insufficient) to 4 (very sufficient). The second item asked whether they worried about not having enough money to deal with emergent expenses, in which responses ranged from 1 (very worried) to 4 (not worried at all). The SRFC score was obtained by averaging the ratings obtained from the two items. The higher the score, the better the subjective perception about their financial condition is.

Table 2 presents the descriptive statistics for the various objective and subjective measures of health and financial conditions. There were no significant gender differences in any of these objective and subjective measures. Among the objective measures, the participants reported they had experienced an average of 3 health problems in the previous year. Moreover, a large proportion claimed that their major source of income was support from their family members (68.4%) and or the government (53.9%). Regarding subjective measures, the mean of self-reported health status was 2.69, which indicated that their subjective health conditions were from average to good. For self-reported financial conditions and worries, the mean was 2.89, which suggested that participants perceived that they had enough money for daily living (FIN1) and seldom worried about not having enough money to deal with emergent expenses.

Procedure

The procedure was the same in all three parts of the present study.

Results

Table 4 shows the correlation pattern of these objective and subjective measures of health and financial conditions with the other psychological variables included in the model. For the objective health measure, that is the number of health problems, a Pearson correlation was calculated to evaluate its associations with life satisfaction and other psychological variables while for the objective financial measures, that is the major sources of income, Eta³ were calculated to assess their associations with life satisfaction. To our surprise, except for the associations between self-reported health status and financial conditions, the number of health problems experienced in the previous year was not significantly associated with life satisfaction (and other psychological constructs). The low values of Eta⁴ suggested that the associations between major sources of income and life satisfaction were weak. For subjective measures of health and financial conditions, weak and moderate significant associations⁵ with LS were found, respectively. Optimism was also found to significantly correlate with subjective perception of health ($r = .25$; $p < .05$) but was only marginally correlated with subjective perception of financial conditions ($r = .16$; $p < .10$).

The significant correlation between subjective health and financial conditions warranted further statistical analysis. However, different from the analysis performed in Parts 1 and 2 of this study, two latent variables were included in Part 3. One was the subjective self-reported health status (SRHS), which has three indicators, and the other one is the subjective self-reported financial conditions (SRFC), which

has two indicators. First, SRHS and SRFC were incorporated in the model by forming two putative paths that connect each of them to the target variables, life satisfaction (Refer to Figure 4). The overall goodness-of-fit of this base hypothesized model was not very satisfactory. Table 8 shows that all of the fit indexes indicated only a moderate goodness-of-fit of the model. For example the value of NNFI was less than .80 and that of RMSEA was even higher than .08. Wald test revealed that the path between SRHS and LS was not significant. However, it was still maintained in the model since this path may have potential theoretical significance in the model as it may mediate the effect of OP for LS. The result of the LaGrange Multiplier (LM) test confirmed this hypothesis and revealed that the fitness of the base model could be significantly improved if the paths from OP to SRHS and SRFC were added. Models 2 and 3 were thus established step by step to test these speculations and they were confirmed. The goodness-of-fit improved significantly as reflected by the increase of NNFI and CFI (See Table 8).

After adding the two mediating paths through the self-reported measures of health and financial conditions, the direct effect of OP on LS was shown to be nonsignificant by the Wald test. Thus, the direct effect of OP on LS was completely mediated by the two additional variables (SRHS & SRFC). In order to verify the mediating effect of the subjective measures adopted in Part 3 and further improve the goodness-of-fitness of the model, the path from OP to LS was dropped. Figure 4 presents the finalized model for Part 3 together with the path coefficients and percentage of variances explained for every dependent variable. The percentage of variance explained by the finalized model for the target variable, satisfaction with life, increased significantly from 24.0 % (the value obtained in part 2 of this study) to 57.9 %. For self-esteem and relationship harmony the percentage of variance

dropped slightly from 20.1 % to 19.3 % and 26.9 % to 25.2 %, respectively, when compared to the model in Part 2.

Discussion

In this part, objective and subjective measures of health and financial conditions were introduced in the model. To our surprise, differential effects of these measures on LS were found. On the other hand, objective measures of health and financial conditions, such as number of health problem experienced in previous year and major sources of income, were found to be statistically unrelated to LS.

There are three plausible explanations for the absence of association between objective measures and satisfaction with life. The first is related to the characteristic of the measurement adopted to assess the objective conditions of health and finance of the elderly. The health problem checklist used in the present study may not effectively reflect the physical health status of the participants. The number of health problems reported may not linearly reflect the level of severity (Zhang & Yu, 1998) because the items in the checklist are of different levels of severity. For example, the impact of experiencing one severe illnesses such as cancer is obviously more than experiencing one minor health problem such as hypertension. One severe illness may overwhelm the effects of several minor illness combined together (Zhang & Yu, 1998). Similarly, items that were designed to tap the objective financial conditions may not reflect the real situation. The three financially-related items asked of the participants to identify whether their major financial supports were from themselves, from their family members or from the Government. However, these three items were not mutually exclusive. That is, one could claim that their major financial resources were from themselves, from their family member, as well as from the

Government at the same time. Also, even if participants who identified their major source of income as from their family or the Government alone, this might not imply that they were in a difficult financial situation that in turn impacted their life satisfaction. The third explanation is that life satisfaction may be more readily affected by subjective perceptions of ones' situation rather than the objective conditions (Kammann, 1983; Argyle, 1999; Chou & Chi, 1999; Okun, Stock, Haring & Witter, 1984; Brief, et al, 1993). In this case, the impact of self-reported health status and financial conditions on LS may be more significant than the number of health problems experienced and the major sources of income.

As hypothesized, subjective measures of health and financial conditions were significantly correlated with life satisfaction. Such findings are consistent with existing research (Chou & Chi, 1999; Chi & Gray, Ventis, & Hayslip, 1992, Krause, 1991, 1993; Okun, et al, 1984; Usui, Keil & Durig, 1985). However, regarding the two subjective measures SRHS and SRFC, two interesting findings were generated. First, we found that when comparing the strengths of the two associations towards LS, the one generated from SRFC is much stronger than the one generated from SRHS (refer to Figure 4). The relatively weak association between SRHS and LS may be related to the characteristics of the present sample. Although the participants were not necessarily in excellent in health conditions, they were free of any significant physical, mental as well as cognitive impairment. They were relatively healthy and well-functioning elderly. Therefore, the impact of health, no matter whether objective or subjective, may be less significant in this sample. On the other hand, although the participants claimed that they did have enough money to spend in their daily lives, the majority of them reported that their income financial resources were not independent (68.4%). Almost all of them were retired and did not have any

income or savings. Their money mainly came from external sources such as their family members and the Government. In other words, they were quite financially dependent and thus they may have perceived their financial situation as not very stable. This may significantly affect their satisfaction with life.

While the strength of subjective perception of financial conditions was unexpectedly strong, the strengths of the paths from self-esteem and relationship harmony towards life satisfaction became weaker than those found in Part 2. This again highlights the significance of subjective stress and worries about financial conditions on LS. Moreover, this finding also nicely matches the classic hierarchical Needs Theory proposed by Maslow (1962, 1970)⁶. Maslow (1962, 1970) proposed that there are different levels of needs that have to be fulfilled in human development. He argued that it is a prerequisite to fulfill the needs in the more basic level, such as needs for food and security, in order to strive for those in the higher levels in the hierarchy, such as need for self-esteem. Since the majority of the participants in the present sample were financially dependent on external resources, they may have perceived that their financial and instrumental needs in their lives were not securely and stably fulfilled. Therefore, their psychological needs in higher hierarchical levels may have been relatively less fundamental in their lives. Therefore, the effects of self-esteem and degree of harmony in their significant social relationship towards their life satisfaction may have been relatively less important. This speculation can be tested in future studies by selecting financially independent elderly as participants.

Subjective measures of health and financial conditions were also found to be significantly associated with optimism. Self-reported health status and financial conditions were both significant mediators of optimism on satisfaction with life. The mediating effects of SRHS and SRFC were specific to optimism. That is, they

did not mediate the effect of other psychological variables, such as SE and RH, on LS. Given the fundamental roles of subjective measures in predicting life satisfaction in late life and the fact that objective health and financial status can hardly be changed in reality, optimism became an especially important factor in promoting life satisfaction through its effect on such subjective measures of health and financial conditions. In other words, we have revealed the mechanism underlying the positive association between OP and LS. Optimism makes the elderly worry less about health and financial conditions and by worrying less (probably experiencing less negative affects), they can more fully enjoy life. Moreover, although the direct effect of OP on LS was statistically completely mediated when SRHS and SRFC were incorporated in the model, the association between OP and SE as well as RH remained significant. Put another way, OP can still significantly predict psychological variables, such as SE and RH, which in turn directly predict LS. With these empirical findings and conclusions, the role of optimism on satisfaction with life became outstandingly important and obvious.

Conclusions and Implications

This study was conducted in three parts. The first part validated the pancultural model of life satisfaction, developed in samples of college students (Kwan et al, 1997), in the present elderly sample. Although the percentage of variance in LS explained by the model was relatively small (20 %), the two fundamental pathways, starting from self-construals and acting through the mediators of self-esteem and relationship harmony, leading to life satisfaction were confirmed. This finding further supports the claim that this model is pancultural as well as age invariant.

The second part of the study incorporated another fundamental characteristic of human nature, optimism, into the model and demonstrated that optimism not only directly predicts life satisfaction of the elderly but also contributes to their self-esteem and relationship harmony. This finding sheds light on the emotional components, such as feeling good about oneself, measured by self-esteem, that are inherent in the concept of optimism. Although, the cause-and-effect relationship between optimism and the target psychological variables, such as life satisfaction, self-esteem, and relationship harmony in the model could not be established fully because the current study is cross-sectional, optimism was found to be comprehensively and significantly associated with these target variables. This finding establishes the core position and theoretical importance of optimism in the model of life satisfaction of the Chinese elderly.

The third part proposed and verified the significant effect of subjective measures of health and financial conditions in predicting life satisfaction and mediating the effect of optimism. These two subjective measures, when incorporated in the model, dramatically increased the percentage of variance in LS explained by the model.

This significant improvement reveals the fundamental predictive power of these subjective perceptions on the life satisfaction of elderly. Furthermore, these two subjective measures fully mediated the effect of OP on LS and revealed possible psychological mechanism underlying the effect of OP on well being. Since the objective conditions of health and finance are some times difficult to be improved and modified, therefore how people perceive their objective situations is more important in predicting their life satisfaction than the effects of the objective facts. It is speculated that optimistic persons may choose to view the same objective situations or events more positively and constructively than their pessimistic counterparts and this approach results in more satisfaction with their lives.

However, can optimism be taught and fostered in general and in the elderly in specific? Empirical evidence are being gathered and accumulated in the field of children emotional education (Seligman, 1991). Seligman (1995) proposed in his book, *The Optimistic Child*, ways and suggestion to raise children equipped with optimism and mastery in their lives. Following these suggestions, Gillham, Reivich, Jaycox, and Seligman (1995) targeted some children who were at risk of depression (who reported depressive symptoms or parental conflicts) and they applied cognitive-behavioral strategies in the intervention programs in which they taught children cognitive and social-problem solving techniques. The prevention group reported less depressive symptoms through two-year follow-up and their “moderate to severe” symptoms were reduced by half when compared with that of the matched no-treatment control group. Therefore, the potential of such intervention program in prevention of depression in elderly may be of great practical importance in social work research and service. Further investigation and experimental studies are

required to address this practical inquiry and see if this intervention could be effectively implemented in elderly.

Moreover, as indicated in methodology, the participants recruited in the present study were relatively healthy and active center-goers. The generalizability of the present findings towards other elderly population needed to be tested and verify. Finally, longitudinal studies are needed to fully clarify the directions of causality between OP, SE, RH, and life satisfaction in old age. While the current study clearly showed that OP, SE, RH, and a person's life satisfaction are highly related, the theoretical prediction that OP increases LS in old age can be tested only through longitudinal intervention. If this hypothesis is true, social interventions and programs which foster optimism in the elderly may become a key priority in the field of social work.

Reference

- Abeles, R. P. (1991). Sense of control, quality of life, and frail older people. In J. E. Birren, J. E. Ludden, J. C. Rowe, & D. E. Deutchman (Eds.), *The concept and measurement of quality of life in the frail elderly*. New York: Academic.
- Abeles, R. P., Gift, H. C., & Ory, M. G., (Eds.) (1994). *Aging and quality of life*. New York: Springer.
- Albert, M. S., Savage, C. R., Jones, K., Berkman, L., Seeman, T., Blazer, D., & Rowe, J. W. (1995). Predictors of cognitive change in older persons: MacArthur Studies of Successful Aging. *Psychology and Aging*, 10, 578-589.
- Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being: America's Perception of life quality*. New York: Plenum Press.
- Antoni, M. H., & Goodkin, K. (1988). Host moderator variables in the promotion of cervical neoplasia. I: Personality facets. *Journal of Psychosomatic Research*, 32, 327-338.
- Aquino, J. A., Russell, D. W., Cutrona, C. E., & Altmaier, E. M. (1996). Employment status, social support, and life satisfaction among the elderly. *Journal of Health and Social Behavior*, 25, 350-371.
- Argyle, M. (1986). *The psychology of happiness*. London: Methuen.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-Being: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- Aspinwall, L. G., & Taylor, S. E. (1990). Stress, Coping and well-being: Modeling a causal hypothesis. Manuscript submitted for publication. (Available from S. E. Taylor, Department of Psychology, University of California, Los Angeles, Ca 90024.)

- Atchley, R. C. (2000). *Social forces and aging : an introduction to social gerontology* (9th ed.). Belmont, CA. : Wadsworth Press.
- Baltes, P. B., & Baltes, M. M. (1990). *Successful aging: Perspectives from the behavioral Sciences*, Cambridge, U.K.: Cambridge University Press.
- Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.
- Beck, A. T. (1991). Cognitive therapy: A 30-year retrospective. *American Psychologist*, 46, 368-375.
- Bentler, P. M. (1992). *EQS program manual*. Los Angeles: BMDP Statistical Software.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Beckman, L., Seeman, T., Albert, M. S., Blazer, D., Kahn, R., Mohs, R., Finch, C., Schneider, E., Cotman, C., McClearn, G., Nesselroade, J., Featherman, D., Garnezy, N., McKhann, G., Brim, G., Prager, D. & Rowe, J. W. (1993). High usual and impaired functioning in community-dwelling older men and women: findings from the MacArthur foundation research network on successful aging. *Journal of Clinical Epidemiology*, 46, 1129-1140.
- Boland, A., & Cappeliez, P. (1997). Optimism and neuroticism as predictors of coping and adaptation in older women. *Personality and individual differences*, 22, 6, 909-919.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: John Wiley & Sons.
- Bowling A., Farquhar, M., Grundy, E., & Formby, J. (1993). Changes in life

- satisfaction over a two and a half year period among very elderly people living in London, *Social Science and Medicine*, 36, 5, 641-655.
- Brief, A. P., Butcher, A. H., George, J. M., & Link, K. E. (1993). Integrating bottom-up and top-down theories of subjective well-being: The case of health. *Journal of Personality and Social Psychology*, 64, 646-653.
- Buchanan, G. M., & Seligman, M. E. P. (Eds.) (1995). *Explanatory style*. Hillsdale, NJ: Erlbaum.
- Buss, D. M. (1991). Evolutionary personality psychology. *Annual Review of Psychology*, 42, 459-491.
- Campbell, A. (1981). *The sense of well-being in America*. New York: McGraw-Hill
- Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research*, 11, 4, 449-462.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283.
- Chang, E. C. (1998). Does dispositional optimism moderate the relation between perceived stress and psychological well-being? A preliminary investigation. *Personality and individual differences*, 25, 2, 233-240.
- Chang, E. C., Maydeu, O. A., & D'Zurilla, T. J. (1997). Optimism and pessimism as partially independent constructs : Relationship to positive and negative affectivity and psychological well-being. *Personality and individual differences*, 23, 3, 433-440.
- Chang, E. C., Asakawa, K., & Sanna, L. J. (in Press). Cultural variations in optimistic and pessimistic bias: Do Easterners really expect the worst and

- westerner really expect the best when predicting future events? *Journal of Personality and Social Psychology*.
- Cheng, S. T., & Hamid, P. N. (1995). To drop or not to drop an ambiguous item: A reply to Shek. *Perceptual-and-Motor-Skills*, 81, 3, 988-990.
- Cheng, S. T., & Hamid, P. N. (1997). Dispositional optimism in Chinese people: what does the Life Orientation Test measures? *International Journal of Psychology*, 32, 1, 15-22.
- Chi, I., & Lee, J. J. (1989). *A health survey of the elderly in Hong Kong* (Resources Paper Series No. 14). Hong Kong: University of Hong Kong.
- Chou, K. L., & Chi, I. (1999). Determinants of life satisfaction in Hong Kong Chinese elderly: A longitudinal study. *Aging and Mental Health*, 3, 4, 328-335.
- Choy, W. C. W. & Moneta, G. B. (in press). The interplay of Autonomy and relatedness in Hong Kong Chinese divorced Single mothers.
- Costa, P. T., & McCrae, R. R. (1980). Influences of extroversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, 38, 668-678.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 2, 276-302.
- Diener, E. & Suh, E. (2000). *Culture and subjective well-being*. Cambridge, MA: MIT Press.
- Diener, E. & Suh, E. (1997). Measuring quality of life: Economic, social, and

- subjective indicators. *Social Indictors Research*, 40, 189-216.
- Diener, E., Gohm, C., Suh, E., & Oishi, S. (1998). Do the effects of marital status on subjective well-being vary across cultures? Manuscript submitted for publication.
- Fisher, B. J. (1995). Successful aging, life satisfaction, and generativity in later life. *International Journal of Aging and Human Development*, 41, 239-250.
- Fontaine, K. R., & Seal, A. (1997). Optimism, social support and premenstrual dysphoria. *Journal of Clinical Psychology*, 53, 3 243-7.
- Fries, J. F. (1990). Medical perspectives upon successful aging. In P. B. Baltes, & M. M. Baltes. (Eds.). *Successful aging: Perspectives from the behavioral Sciences*, Cambridge, U.K.: Cambridge University Press.
- Garfein, A. J., & Herzog, A. R. (1995). Robust Aging among the young-old, old-old, and oldest-old. *Journal of Gertonology: Social Science*, 508, 577-587.
- Gillham, J. E., Reivich, K. J., Jaycox, L. H., & Seligman, M. E. P. (1995). Prevention of depressive symptoms in schoolchildren: Two-year follow-up. *Psychological Science*, 6, 343-351.
- Girzadas, P. M., Counte, M. A., Glandon, G. L., & Tancredi, D. (1993). An analysis of elderly health and life satisfaction, *Behavior, Health and Aging*, 3, 2, 103-117.
- Goodwin, R., & Tang, C. S. (1996). Chinese personal relationships. In M. H. Bond (Ed.). *The handbook of Chinese psychology*. (pp.189-207). Hong Kong Oxford University Press.
- Gray, G. R., Ventis, D. G., & Hayslip, B. Jr. (1992). Socio-cognitive skills as determinant of life satisfaction in aged persons, *International Journal of Aging and Human Development*, 35, 3, 205-218.

- Guarnera, S., & Williams, R. L. (1987). Optimism and locus of control for health and affiliation among elderly adults. *Journal of Gerontology*, 42, 6, 594-595.
- Harju, B. L., & Bolen, L. M. (1998). The effects of optimism on coping and perceived quality of life of college students. *Journal of Social Behavior and Personality*, 13, 2, 185-200.
- Haring, M. J., Stock, W. A., & Okun, M. A. (1984). A research synthesis of gender and social class as correlates of subjective well being. *Human Relations*, 37, 645-657.
- Haring-Hidore, M. J., Stock, W. A., Okun, M. A., & Witter, R. A. (1985). Marital status and subjective well-being: A research synthesis. *Journal of Marriage and the Family*, 47, 947-953.
- Hazzard, W. R. (1995). Weight control and exercise: Cardinal features of successful preventive gerontology [Editorial]. *Journal of the American Medical Association*, 274, 1964-1965.
- Heine, S. J., & Lehman, D. R. (1995). Cultural variation in unrealistic optimism: Does the West feel more invulnerable than the East? *Journal of Personality and Social Psychology*, 68, 595-607.
- Hooker, K., & Siegler, I. C. (1992). Separating apples from oranges in health ratings: Perceived health includes psychological well-being. *Behavior, Health, and Aging*, 2, 81-92.
- Hooyman, N. R. (1996). *Social gerontology : a multidisciplinary perspective* (4th ed). Boston : Allyn and Bacon Press.
- James, W. (1958). *Varieties of religious experience*. New York: Mentor.
- June, C. (1933). *Modern man in search of a soul*. New York: Harcourt.
- Kagitcibasi, C. (1995). Is psychology related to global development in human

issues? *American Psychologist*, 50, 293-300.

Kahneman, D., Diener, E., & Schwartz, N. (Eds.). (1999). *Well-being: The foundations of hedonic psychology*. New York: Russell Sage Foundation.

Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwartz. (Eds.). (1999). *Well-being: The foundations of hedonic psychology*. New York: Russell Sage Foundation.

Kammann, R. (1983). Objective circumstances, life satisfaction, and sense of well-being: Consistencies across time and place. *New Zealand Journal of Psychology*, 12, 14-22.

King, K .B., Rowe, M. A., Kimble, L. P., & Zerwic, J. J. (1998). Optimism, coping and Longterm recovery from coronary artery surgery in women. *Research in Nursing and Health*, 21, 1, 15-26.

Krause, N. (1991). Stressful events and life satisfaction among elderly men and women. *Journal of Gerontology*, 46, 2, 584-592.

Krause, N. (1993). Race differences in life satisfaction among elderly men and women. *Journal of Gerontology: Social Science*, 48, S235-244.

Kwan, V. S. Y., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life Satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology*, 73, 5, 1038-1051.

Lai, D. W. L., & McDonald, J. R. (1995). Life satisfaction of Chinese elderly immigrants in Calgary. *Canadian Journal of Aging*, 14, 536-552

Lai, J. C. L. & Wong, W. S. (1998). Optimism and coping with unemployment among Hong Kong Chinese women. *Journal-of-Research-in-Personality*, 32, 4, 454-479.

Lai, J. C. L. (1997). Relative predictive power of the optimism versus the pessimism

- index of a Chinese version of the Life Orientation Test. *The Psychological Record*, 47, 399-410.
- Lai, J. C. L., Cheung, H., Lee, W. M., & Yu, H. (1998). The utility of the revised Life Orientation Test to measure optimism among Hong Kong Chinese. *International Journal of Psychology*, 33, 1, 45-56.
- Lazarus, R. S. (1983). The costs and benefits of denial. In S. Benitz (Ed.), *Denial of stress* (pp. 1-30). New York: International
- Leung, (1999). [Personality and family predictors of dispositional optimism among Chinese adolescents in Hong Kong]. Unpublished master thesis. Chinese University of Hong Kong.
- Leung, J. P., & Leung, K. (1992). Life satisfaction, self-concept, and relationship with parents in adolescence. *Journal of Youth and Adolescence*, 21, 653-665.
- Liang, J., Levin, J. S., & Krause, N. M. (1989). Dimensions of the OARS mental health measures. *Journal of Gerontology*, 44, 5, 127-138.
- Li, C. (1998). [Social perception of achieved relationship harmony in the work place]. Unpublished master thesis. Chinese University of Hong Kong.
- Lu, L., & Shin, J. B. (1997). Sources of happiness: A qualitative approach. *Journal of Social Psychology*, 137, 2, 181-188.
- Lucas, R. E. & Gohm, C. L. (2000). Age and Sex Differences in Subjective Well-being across Cultures. In E. Diener, & E. M. Suh (Eds). *Culture and subjective well-being*, Cambridge, MA: MIT Press.
- Markus, H. R., & Kitayama, S. (1991). Culture and self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224-253.
- Maroto, J. J., Shepperd, J. A., & Pbert, L. A. (1990). Dispositional optimism as a

- predictor of Behavioral changes among cardiac patients. Manuscript submitted for publication. (Available from J. A. Shepperd, Department of Psychology, Texas A & M University, College Station, TX 77843.)
- Marshall, G. N., & Lang, E. L. (1990). Optimism, self-mastery, and symptoms of depression in women professionals. *Journal of Personality and Social Psychology*, 59, 1, 132-139.
- Marshall, G. N. Wortman, C. B., Kusulas, J. W., Hervig, L. K., & Bickers, R. R. (1992). Distinguishing optimism from pessimism: Relations to fundamental dimensions of mood and personality. *Journal of Personality and Social Psychology*, 62, 6, 1067-1074.
- Maslow, A. H. (1962). *Toward a psychology of being*. Princeton, NJ: Van Nostrand.
- Maslow, A. H. (1970). *Motivation and personality*. New York: Harper & Row.
- Matlin, M., & Stang, D. (1978). *The Pollyanna principle*. Cambridge, MA: Schenkman.
- McCrae, R. R., & Costa, P. T. (1991). Adding and : The full-five factor model and well-being. *Personality and Social Psychology Bulletin*, 17, 227-232.
- Mckenna, F. P. (1993). It won't happen to me: unrealistic optimism or illusion of control? *British Journal of Psychology*, 84, 39-50.
- Michalos, A. C. (1991). *Global report on student well-being* (Vols. 1-4). New York: Springer-Verlag.
- Munro, B. H. (2001). *Statistical Methods for health care and research* (4th ed.). Philadelphia, PA: Lippincott Press.
- Myer, D. G. (2000). The funds, friends and faith of happy people. *American Psychologist*, 55, 1, 56-67.
- Myer, D. G., & Diener, E. (1995). Who is happy? *Psychological Science*, 6, 10-19.

- Newsom, J. T., & Schultz, R. (1996). Social support as a mediator in the relation between functional status and quality of life in older adults. *Psychology and Aging*, 11, 34-44.
- Okun, M. A., Stock, W. A., Haring, M. J., & Witter, R. A. (1984). Health and subjective well-being: A meta-analysis. *International Journal of Aging and Human development*, 19, 111-132.
- Pavot, W., & Diener, E. (1993). Review of Satisfaction with Life Scale, *Psychological Assessment*, 5, 164-172.
- Peacock, E. J., & Wong, P. T. P. (1996). Anticipatory stress: the relation of locus of control, optimism, and control appraisals to coping. *Journal of Research in Personality*, 30, 204-222.
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research : explanation and Prediction*. (3rd ed.). Fort Worth, TX : Harcourt Brace College Press.
- Peterson, C. (2000). The future of optimism. *American Psychologist*, 55, 1, 44-55.
- Peterson, C., Seligman, M. E. P., Yurko, K. H., artin, L. R., & Friedman, H. S. (1998). Catastrophizing and untimely death. *Psychological Science*, 9, 49-52.
- Peterson, C., & Park, C. (1998). *Learned helplessness and explanatory style*. In D. F. Barone, V. B. Van Hasselt, & M. Hersen (Eds.), *Advanced Personality* (pp. 287-310). New York: Plenum.
- Rijken, M., Komproe, I. J., Ros, W. J. G., Winnubst, J. A. M., & Heesch, N. C. A. (1995). Subjective well-being of elderly women: conceptual differences between cancer patients, women suffering from chronic ailments and healthy women. *British Journal of Clinical Psychology*, 34, 289-300.
- Robbins, A. S., Spence, J. T., & Clark, H. (1991). Psychological determinants of

- health and performance: The tangles web of desirable and undesirable characteristics. *Journal of Personality and Social Psychology*, 61, 755-765.
- Rodin, J., & Timko, C. (1991). *Sense of control, aging and health*. In M. G. Ory, R. P. Abeles, & P. D. Lipman (Eds.), *Aging, health, and behavior*, Thousand Oak, CA: Sage.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University.
- Rowe, J. W. & Kahn, R. L. (1987). Human aging: Usual and Successful Aging. *Science*, 237, 143-149.
- Rowe, J. W. & Kahn, R. L. (1997). Successful Aging. *The Gerontologist*, 37, 4, 433-440.
- Scheier, M. F., Matthews, K. A., Owens, J. F., Magovern, G. J., Lefebvre, R. C., Abbottt, R. A., & Carver, C. S. (1989). Dispositional optimism and recovery from coronary artery byass surgery: the beneficial effects on physical and psychological well-being. *Journal of Personality and Social Psychology*, 57, 6, 1024-1040.
- Scheier, M. F., Matthews, K. A., Owens, J. F., Magovern, J. G., Sr., & Carver, C. S. (1990). [Dispositional optimism after 5 years from coronary artery bypass surgery]. Unpublished raw data.
- Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology*, 51, 1257-1264.
- Scheier, M. F., & Carver, C. S. (1992). Effects of Optimism on Psychological and physical well-being: Theoretically overview and empirical update. *Cognitive Therapy and Research*, 16, 2, 201-228.

- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self mastery, and self esteem): a reevaluation of the life orientation test. *Journal of Personality and Social Psychology*, 67, 6, 1063-1078.
- Schulz, R., Bookwala, J., Knapp, J. E., Scheier, M., & Williamson, G. M. (1996). Pessimism, age and cancer mortality. *Psychology and Aging*, 11, 2, 204-309.
- Schweizer, K., Beck, S. A., Schneider, R. (1999). Cognitive bias of optimism and its influence on psychological well-being. *Psychological Reports*, 84, 2, 627-636.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55, 1, 5-14.
- Seligman, M. E. P., Reivich, K., Jaycox, L., & Gillham, J. (1995). *The optimistic child*. Boston, MA: Houghton Mifflin Press.
- Seligman, M. E. P. (1991). *Learned optimism*. New York: Knopf.
- Seligman, M. E. P. (1998, April). Positive social science, *APA Monitor*, 29, 2, 5.
- Shmotkin, D. (1990). Subjective well-being as a function of age and gender: A \ multivariate look for differentiated trends. *Social Indicator Research*, 23, 201-230.
- Shin, D. C., & Johnson, D. M. (1978). Avowed happiness as an overall assessment of the quality of life. *Social indicators Research*, 5, 475-492.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, 20, 580-591.
- Smith, T. W., Pope, M. K., Rhodewalt, F., & Poulton, J. L. (1989). Optimism, neuroticism, coping and symptoms reports: an alternative interpretation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 56, 4,

640-648.

Snyder, C. R. (1994). *The psychology of hope: You can get there from here*. New York: Free Press.

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193-210.

Taylor, S. E., Kemeny, M. E., Aspinwall, L. G., Schneider, S. G., Rodriguez, R., & Herbert, M. (1991). Optimism, coping, psychological distress, and high-risk sexual behavior among men at risk for AIDS. Manuscript submitted for publication. (Available from S. E. Taylor, Department of Psychology, University of California, Los Angeles, Ca 90024.)

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, 38, 1161-1173.

Taylor, S. E., Collins, R. L., Skokan, L. A., & Aspinwall, L. G. (1989). Maintaining positive illusions in the face of negative information: Getting the facts without letting them get to you. *Journal of Social and Clinical Psychology*, 8, 114-129.

Tiger, L. (1979). *Optimism: The biology of hope*. New York: Simon & Schuster.

Usui, W. M., Keil, T. J., & Durig, K. R. (1985). Socioeconomic comparisons and life Satisfaction of elderly adults. *Journal of Gerontology*, 40, 1, 110-114.

Verbrugge, L. M., Reoma, J. M., & Gruber-Baldini, A. L. (1994). Short-term dynamics of disability and well-being. *Journal of Health and Social Behavior*, 35, 97-117.

Warr, P., & Payne, R. (1982). Experience of strain and pleasure among British

- adults. *Social Science and Medicine*, 16, 1691-1697.
- Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress and distress: Exploring the central role of negative affectivity. *Psychological Review*, 96, 234-254.
- Williams, D. G. (1992). Dispositional optimism, neuroticism and extroversion. *Personality and Individual Differences*, 13, 4, 474-477.
- Wilson, W. R. (1967). Correlates of avowed happiness. *Psychological Bulletin*, 67, 4, 294-306.
- Wright, S. (1934). The method of path coefficients. *Annals of Mathematical Statistics*, 5(September), 161-215.
- Yeung, A., & Chow, E. (2000). Correlates of subjective well-being of Chinese elderly in Hong Kong. *Journal of Social Work Research and Evaluation*, 1, 2, 2000.
- Yik, M., Bond, M. H., & Paulhus, D. L. (1998). Do Chinese self-enhance or self-efface? It's a matter of domain. *Personality and Social Psychology Bulletin*, 24, 4, 399-406.
- Zhang, A. Y. & Yu, L. C. (1998). Life satisfaction among Chinese elderly in Beijing. *Journal of Cross-Cultural Gerontology*, 13, 109-125.

Footnotes

1. Electronic search result for *Psychological Abstracts* from PSYINFO for the period 1971~2000 for negative and positive keywords.

Words Periods	Depres- sion (1)	Anxie- ty (2)	Impair- ment (3)	Happ -iness (4)	Life Satis- faction (5)	Well being (6)	Nega- tive (1 - 3)	Posi- tive (4 - 6)	Ratio
1971~1980	6850	9359	2196	411	284	513	18405	1208	15.23
1981~1990	24674	18649	6052	891	1432	3046	49375	5369	9.19
1991~2000	39570	26699	12696	1451	1695	7819	78965	10965	7.20

2. The standard regression coefficients of self-esteem (SE) and relationship harmony (RH) and their relative importance in predict life Satisfaction (LS) according to Kwan et al (1997).

Samples	SE	RH	Relative Importance
US college students	.65	.23	SE > RH
HK college students	.45	.44	SE ~ RH

3. Eta is a measure of association that ranges from 0 to 1, with 0 indicating no assoication between the two variables and values close to 1 indicating a high degree of association. Eta is appropriate for a dependent variable measured on an interval scale (e.g., life satisfaction) and an independent variable with a limited number of categories (e.g., sources of income).

4. Eta values

Major sources of income (Yes =1; No =0)	Independent	From Family	From Government
LS	.036	.120	.173

5. Correlation were calculated based on mean of the three health-related items and the two finance-related items for subjective health measure and financial condition measure, respectively.
6. The seven levels of needs proposed by Maslow (1962, 1970) were:
 - 1) physiological needs
 - 2) safety and security needs
 - 3) belongingness and love needs
 - 4) esteem needs
 - 5) cognitive needs
 - 6) aesthetic needs
 - 7) need for self-actualization

List of Tables

Table 1. Demographic Information of the Participants

Table 2. Descriptive Statistics of Psychological Variables Measured in Part 1 and 2 (SD) and Various Objective and Subjective Measures in Part 3 (SD)

Table 3. Summary of Hierarchical Multiple Regression analysis for Demographic Variables Predicting Life Satisfaction

Table 4. Correlation Matrix of Psychological Variables and Measures of Health and Financial Conditions

Table 5. Fit Indices for the Nested Models in Part 1

Table 6. Summary of the Path Models of Life Satisfaction Derived in College Students (Kwan et al, 1997) and Elderly (Present Study) in Hong Kong

Table 7. Fit Indices for Various Nested Models in Part 2

Table 8. Fit Indices for Various Nested Models in Part 3

Table 1

Demographic Information of the Participants

Demographic Variables	Total (N = 117)	Male (N = 32)	Female (N = 85)	Gender difference
	N (%)			
Age (Years)				t(115) = 1.865
55-59 years	2 (1.7)	0 (0.0)	2 (2.4)	Mean (SD) M: 75.09 (7.83) F: 72.27 (7.09)
60-64 years	15 (12.8)	3 (9.4)	12 (14.1)	
65-69 years	22 (28.3)	5 (15.6)	17 (20.0)	
70-74 years	26 (23.0)	9 (28.1)	17 (20.0)	
75-79 years	29 (15.7)	5 (15.6)	24 (28.2)	
80-84 years	15 (5.2)	5 (15.6)	10 (11.8)	Overall Mean (SD) 73.04 (7.38)
85-88 years	8 (1.6)	5 (15.6)	3 (3.5)	
Marital status *				$\chi^2 (1) = 5.09^*$
(Married =1; Not Married =0)				
Married	56 (47.9)	21 (65.7)	35 (41.2)	
Not Married				
Never married	7 (6.0)	5 (15.6)	2 (2.4)	
Divorced	5 (4.3)	1 (3.1)	4 (4.7)	
Widowed/Separated	47 (40.2)	5 (15.6)	42 (49.3)	
Missing	2 (1.7)	0 (0.0)	2 (2.4)	
Educational level *** (Years)				t (112) = 3.54***
No formal education (0 year)	35 (29.9)	3 (9.4)	32 (37.6)	Mean (SD)

Primary education (1-6 year)	58 (49.6)	16 (50.0)	42 (49.4)	M: 5.85 (4.83)
Secondary education (7-13 year)	18 (15.4)	9 (28.0)	9 (10.6)	F: 2.97 (3.40)
Post-secondary education (14 or + year)	3 (2.6)	2 (6.3)	1 (1.2)	Overall Mean (SD)
Missing	3 (2.6)	2 (6.3)	1 (1.2)	3.73 (4.02)
Living Arrangement (With others = 1; Alone = 0)				$\chi^2 (1) = .145$
Living with spouse/children/friends	81 (69.2)	23 (71.9)	58 (68.3)	
Living alone	36 (30.8)	9 (28.1)	27 (31.7)	
Religious Affiliation (Yes = 1; No = 0)				$\chi^2 (1) = .022$
Yes				
Christianity/Catholic	24 (20.5)	8 (25.0)	16 (18.8)	
Buddhism/Taoism	7 (6.0)	3 (9.4)	4 (4.7)	
Others	8 (6.8)	0 (0.0)	8 (9.4)	
No	78 (66.7)	21 (53.8)	57 (67.1)	

Notes: Numbers in parenthesis represent percentages. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2

Descriptive Statistics of Psychological Variables Measured in Part 1 and 2 (SD) and Various Objective and Subjective Measures in Part 3

(SD)					
Psychological Variables	Internal Consistency (α)	Total (N = 117)	Male (N = 32)	Female (N = 85)	Gender difference (t-vaule)
		Mean (SD)			
Part 1					
LS	.7914	5.12 (1.10)	5.13 (1.05)	5.11 (1.13)	.097
SC-IND	.5492	5.84 (.75)	5.91 (.84)	5.82 (.76)	.499
SC-INT	.7078	5.82 (.81)	5.89 (.73)	5.78 (.81)	-.710
SE	.7720	2.85 (.49)	2.84 (.53)	2.86 (.48)	-.162
RH	.7651	5.78 (.92)	5.95 (.96)	5.72 (.91)	.987
Part 2					
OP	.4558	3.97 (.59)	3.88 (.52)	4.00 (.61)	-1.128
Part 3					
Objective Measures					
HPC ¹	---	3.08 (2.00)	2.78 (2.06)	3.19 (1.98)	-.904

¹ Total N for HPC is 99 including 27 males and 72 females

Major sources of income ² (Yes = 1 ; No = 0)					χ^2 (1) = 2.175
Independent					
Yes	---	21 (68.4)	10 (31.2)	11 (12.9)	χ^2 (1) = 2.175
No	---	94 (29.9)	22 (68.8)	72 (84.7)	
Missing	---	2 (1.7)	0 (0.0)	2 (2.4)	
From Family Members					χ^2 (1) = 2.175
Yes	---	80 (68.4)	19 (59.4)	61 (71.7)	
No	---	35 (29.9)	13 (40.6)	22 (25.9)	
Missing	---	2 (1.7)	0 (0.0)	2 (2.4)	χ^2 (1) = .377
From the Government					
Yes	---	63 (53.9)	19 (59.4)	44 (51.8)	
No	---	52 (44.4)	13 (40.6)	39 (45.9)	
Missing	---	2 (1.7)	0 (0.0)	2 (2.3)	
Subjective Measures					
SRHS1	---	2.60 (1.02)	2.68 (1.08)	2.57 (1.01)	.476
SRHS2	---	2.68 (.95)	2.75 (.95)	2.65 (.95)	.482
SRHS3	---	2.79 (.87)	2.84 (.92)	2.77 (.85)	.394
SRHS (mean)	---	2.69 (.70)	2.78 (.75)	2.65 (.68)	.869
SRFC1	---	2.86 (.59)	2.91 (.59)	2.85 (.59)	.485
SRFC2	---	2.91 (.94)	2.97 (.78)	2.89 (.99)	.432
SRFC (mean)	---	2.89 (.61)	2.94 (.56)	2.88 (.63)	.515

² Another item asked the participants whether investment is a major source of income in your life. Except 10 missing data, all participants reply “NO”.

Table 3
Summary of Hierarchical Multiple Regression analysis for Demographic Variables

Predicting Life Satisfaction					
Variables	B	SE B	β	R^2	Adjusted R^2
Model 1					
Age	.001	.013	-.005		
Sex	.181	.230	.081		
Education	.047	.025	.190	.034	.006
Model 2					
Age	.008	.014	.061		
Sex	.326	.234	.145		
Education	.052	.024	.212*		
Living Conditions	.274	.219	.124		
Marital Status	.409	.203	.205*		
Religious Affiliation	.232	.197	.111	.109	.056

Notes: * $p < .05$

Table 4

Correlation Matrix of Psychological Variables and Measures of Health and Financial Conditions

Variables	LS	SE	RH	IND	INT	OP	HPC	SRHS	SRFC
Life Satisfaction (LS)	-								
Part 1									
Self-Esteem (SE)	.449**	-							
Relationship Harmony (RH)	.364**	.232*	-						
Independent				-					
Self-Construal (IND)	.073	.317**	.134						
Interdependent					-				
Self-Construal (INT)	.367**	.333**	.417**	.097					
Part 2 & 3						-			
Optimism (OP)	.368**	.261*	.225*	.054	.139				
Health Problem Checklist (HPC)	-.020	-.018	.043	-.014	.079	.028	-		
Self-Reported Health Status (SRHS)†	.242*	.208*	.291**	.104	.057	.247*	.343**	-	
Self-Reported Financial Conditions (SRFC)††	.410**	.167#	.282**	.102	.148	.158#	-.250*	.280**	-

Notes: $N=117$. LS = Life Satisfaction; SE = Self-Esteem; RH = Relationship Harmony;
 IND = Independent Self-Construal; INT = Interdependent Self-Construal, OP = Optimism.
 † SRHS is the mean of the three items about self-reported health status.
 †† SRFC is the mean of the two items about self-reported financial conditions.
 * $p<.05$; ** $p<.01$; # $p<.10$

Table 5

Fit indices for the nested models in Part 1

Model	χ^2	χ^2 / df	$\Delta \chi^2$	Δdf	NNFI	CFI	RMSEA
1. Base model	9.384	1.564	---	---	.890	.934	.084
2. INT model	4.777	.9555	4.571	1	1.009	1.00	.000
3. Equal constraint model	6.173	1.029	1.396	1	.994	.997	.022

Notes: NNFI = Nonnormed Fit Index; CFI = Comparative Fit Index ; RMSEA = Root Mean Square Error Approximation

Table 6
Summary of the Path Models of Life Satisfaction Derived in College Students (Kwan et al, 1997) and Elderly (Present Study) in Hong Kong

Variables	β	R^2
College students		
SE	.45*	
RH	.44*	.42
Elderly		
SE	.193*	
RH	.380*	.197

Notes: * $p < .05$

Table 7

Fit Indices for Various Nested Models in Part 2

Model	χ^2	χ^2 / df	$\Delta \chi^2$	Δdf	NNFI	CFI	RMSEA
1. OP to LS model	17.124	1.903	---	---	.787	.872	.107
2. OP to SE model	11.804	1.476	5.320	1	.888	.940	.078
3. OP to RH model	6.738	0.963	5.060	1	1.009	1.00	.000

Notes: NNFI = Nonnormed Fit Index; CFI = Comparative Fit Index ; RMSEA = Root

Mean Square Error Approximation

Table 8

Fit Indices for Various Nested Models in Part 3

Model	χ^2	χ^2 / df	$\Delta \chi^2$	Δdf	NNFI	CFI	RMSEA
1. SRHS & SRFC to LS model	59.283	1.482	---	---	.787	.845	.081
2. OP to SRHS model	54.831	1.406	4.452	1	.820	.873	.075
3. OP to SRFC model	45.822	1.206	9.009	1	.909	.937	.054
4. OP X \rightarrow LS model	45.979	1.179	.157	1	.921	.944	.051

Notes: NNFI = Nonnormed Fit Index; CFI = Comparative Fit Index ; RMSEA = Root

Mean Square Error Approximation

Figure Captions

Figure 1. Pancultural Model of Life Satisfaction Developed by Kwan, Bond & Singelis
(1997)

Figure 2. Finalized Self-Construal Model of Life Satisfaction for Part 1

Figure 3. Finalized Optimism Model of Life Satisfaction for Part 2

Figure 4. Finalized Optimism Model with Subjective Measures of Health and Financial
Status of Life Satisfaction for Part 3

Figure 1

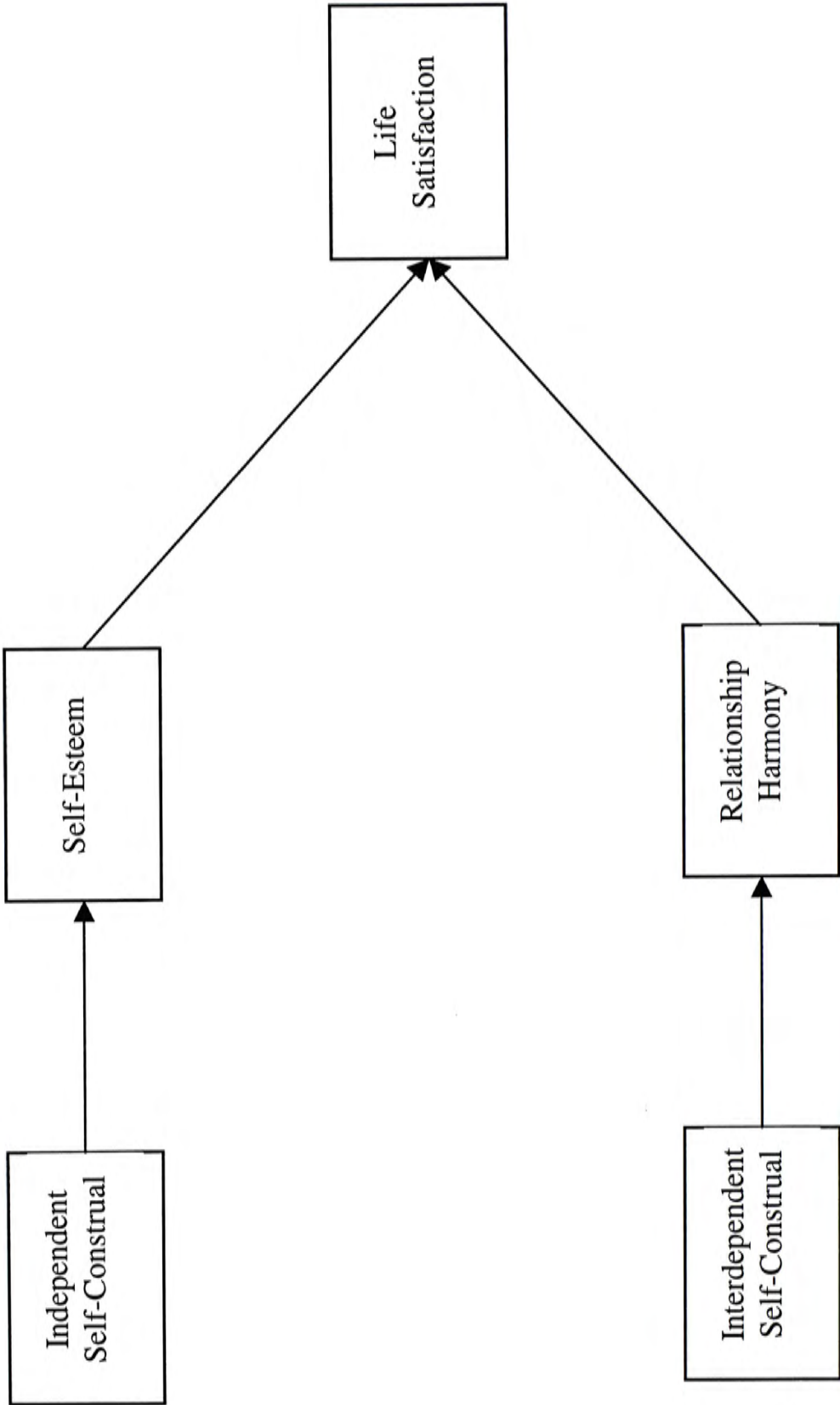
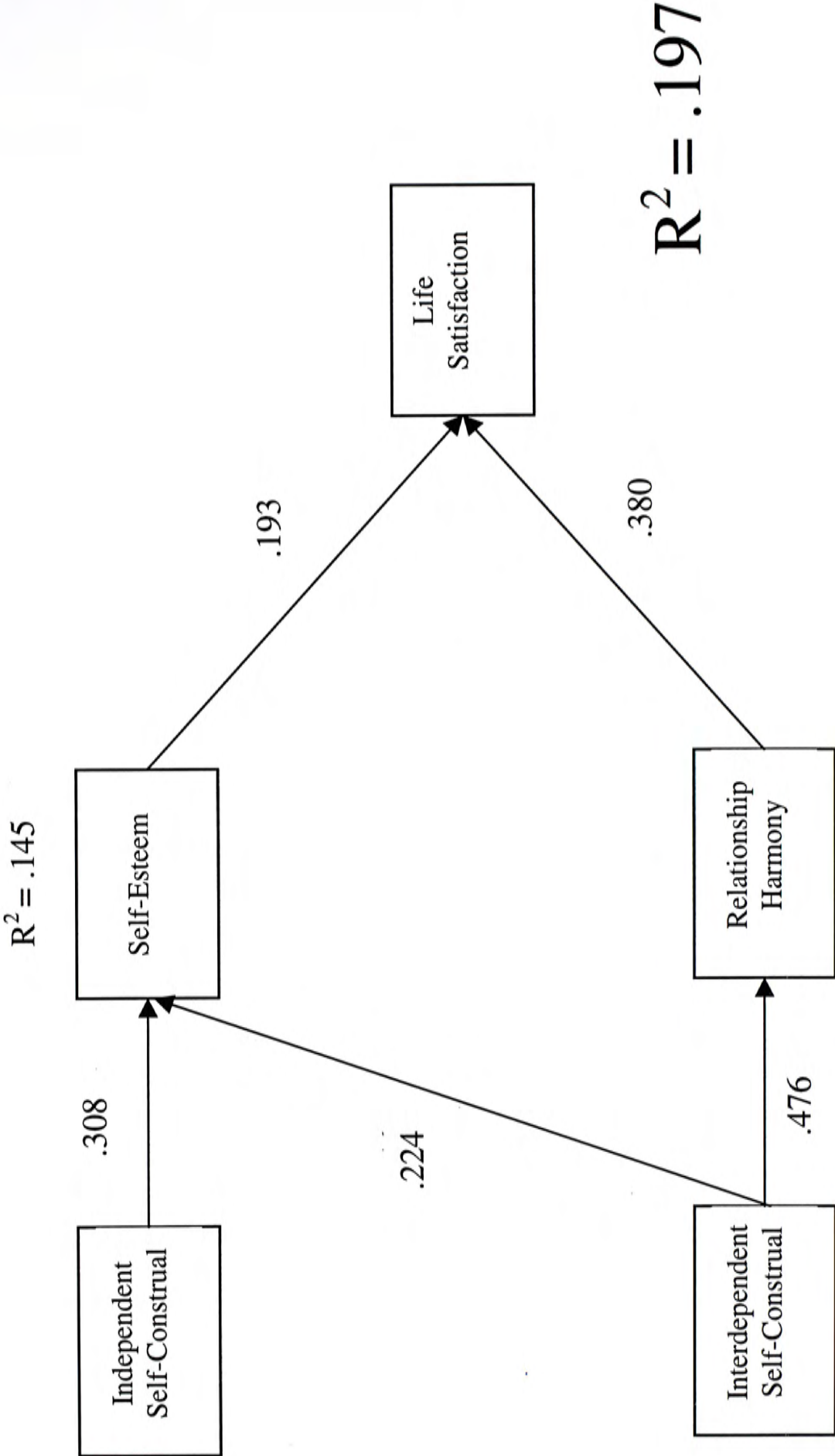


Figure 2



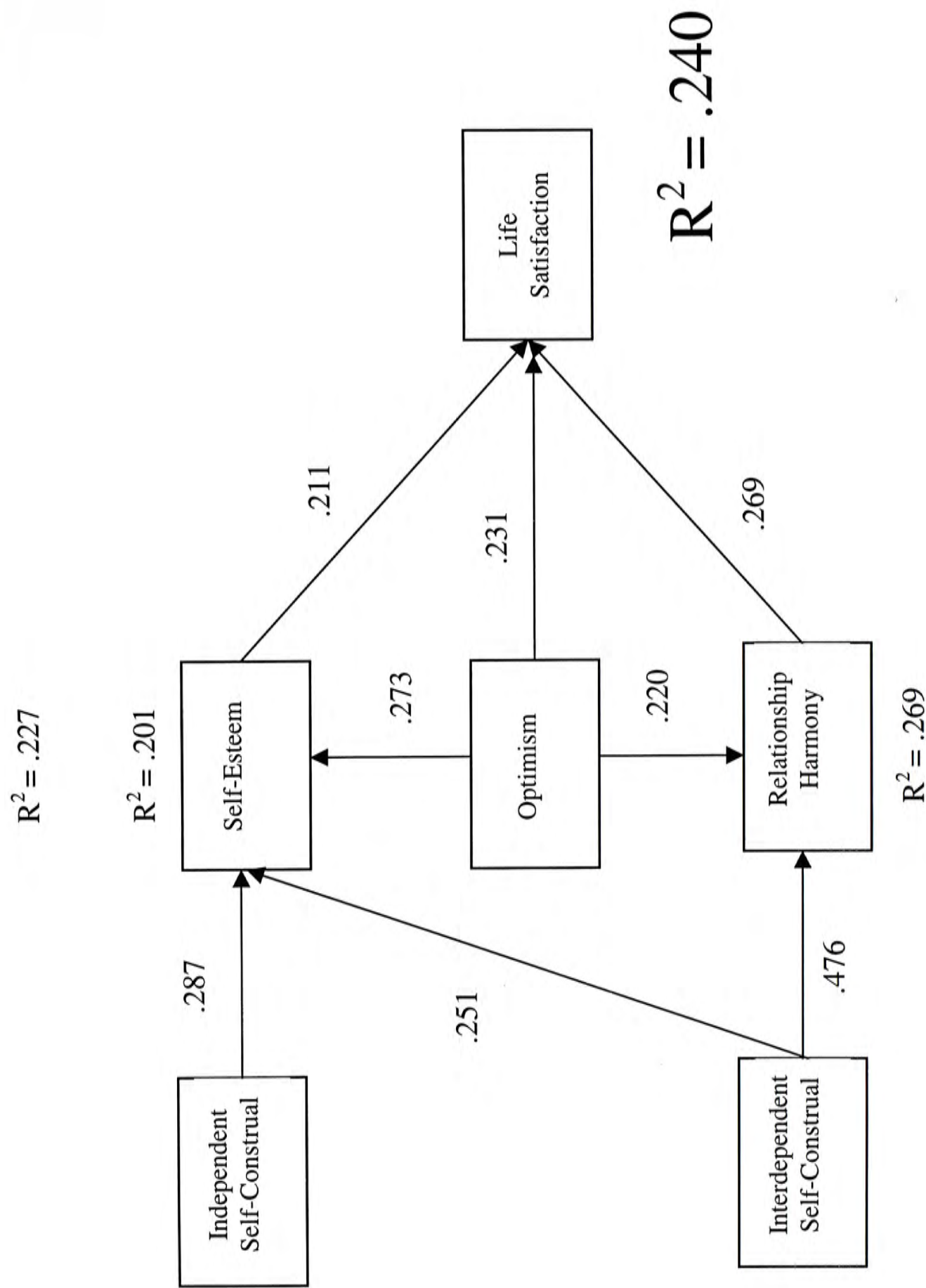
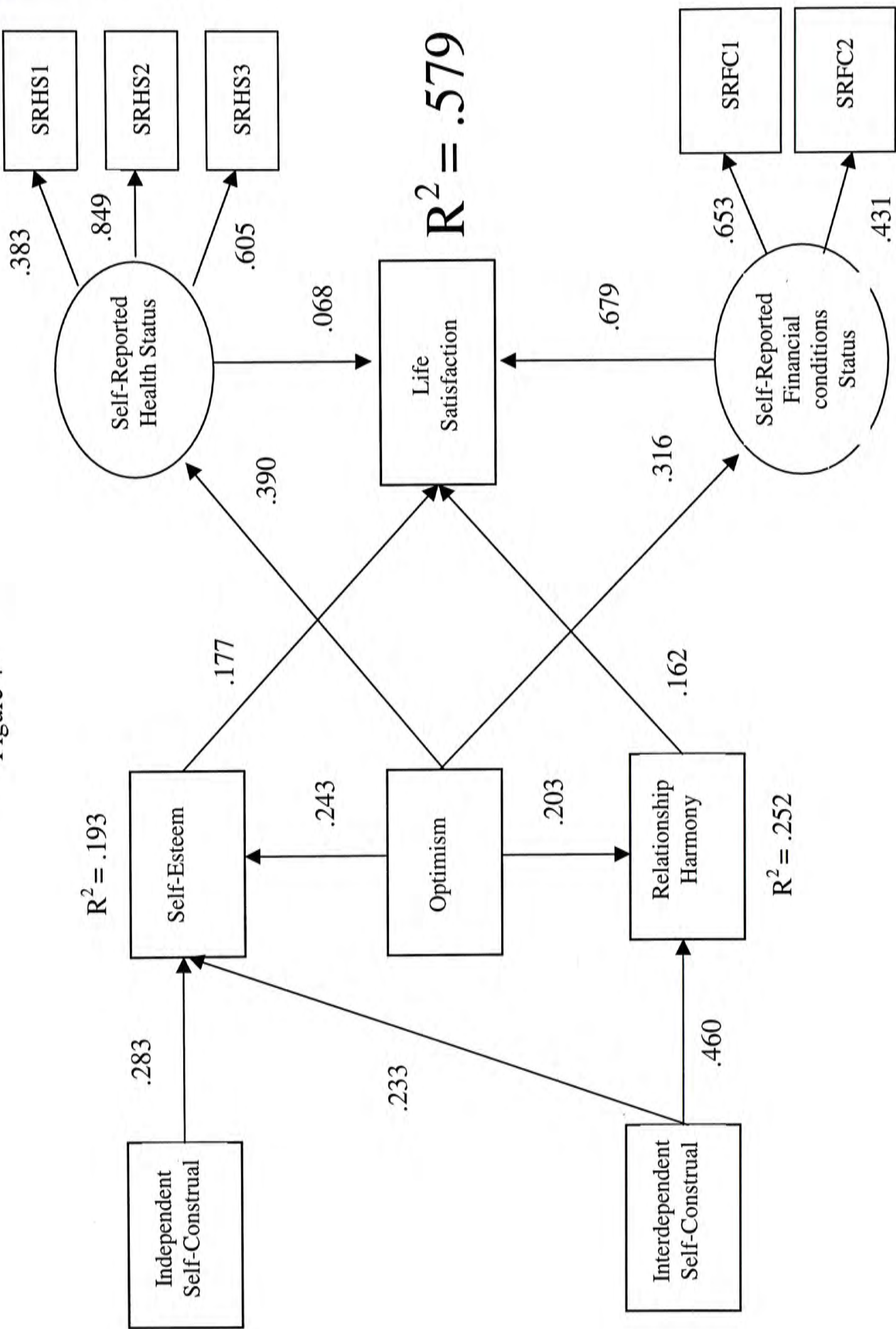


Figure 4



Appendix 1

長者同意書

中文大學心理系研究生梁偉聰先生以及蒙教授 (Giovanni Moneta) 現正進行一個有關於長者生活滿足感的研究。

本人(長者姓名) _____ 願意參與這測試並知道以下的事：

- 1) 面談約需一小時。
- 2) 在面談中，你會聽一些詞句，畫一些東西和做一些動作。
你也會回答一些有關於你生活模式及健康的事。
- 3) 這訪問不會做成什麼身體的傷害，但或許你會感到疲倦，你隨時可以要求小息及終止測試。
- 4) 參加面談全是自願性質。
- 5) 所有資料都是保密。
- 6) 面談後，我們會送一份紀念品給你以感謝你的幫忙及參與。
- 7) 若對這研究有任何問題，可以聯絡梁偉聰先生(電話：26096521)或蒙教授(電話：26096464)

非常感謝你的參與！

長者簽署： _____

日期： _____

Appendix 2

BATTERY FOR LIFE SATISFACTION

Examiner:_____ File No.:_____ Date: / ____ / ____

1. Interview

1. 姓名：_____ 2. 性別：_____ 3.電話號碼：_____ 4. 年齡：_____

5a. 現時居住情況：

- ☐ 獨居 ☐ 與直系親屬同住 (伴侶、子女) ☐ 與親戚同住
☐ 與朋友同住 ☐ 住在老人院 ☐ 其他〔請說明：_____〕

5b. 同住成員：_____ 5c. 居住房屋類型：_____ 5d. 居住房屋面積：_____英尺

6. 婚姻狀況：未婚/ 已婚 / 離婚 / 鰥寡 7. 子女數目：_____

8. 教育程度： 未曾受教育_____ 小學_____年； 中學_____年； 大學_____年； 其他 _____
總共 _____年

9. 現時工作狀況：

- ☐ 全職工作 ☐ 兼職工作 ☐ 退休 ☐ 其他〔請說明：_____〕

10. 經濟來源 1. 獨立 2. 家人資助 3. 政府福利 4. 投資 5.其他:_____ (可圈多於一項)

出示提示咭 (一)

a. 你有沒有足夠的金錢應付你日常生活的開支？	非常不足夠 (1)	不足夠 (2)	足夠 (3)	非常足夠 (4)
b. 你有沒有擔心沒有足夠的金錢應付突如其來的緊急開支？	非常擔心 (1)	有一點擔心 (2)	很少擔心 (3)	完全沒有擔心 (4)

11. 以往就業情況：(詢問三項從事較長時間的職業)

對上的職業是：_____ 職位:_____ 任職多少年：_____ 工作範圍：_____
對上的職業是：_____ 職位:_____ 任職多少年：_____ 工作範圍：_____
對上的職業是：_____ 職位:_____ 任職多少年：_____ 工作範圍：_____

12. 備註：_____

2. 活動程度及習慣 (Physical Activities Level)

我而家會問你過去一個月你曾經做過既某幾種活動，例如你在過去一個月曾做過幾多輕鬆慢步或者劇烈運動等等。

a. 你有沒有晨運的習慣？ ☐ 有 ☐ 沒有

b. 如有，一星期晨運幾日？ 每日做幾耐？ _____日 / 星期； _____ 分鐘 / 日

c. 晨運做 d 咩？ _____

運動	頻率 (次 / 星期)	時段 (分鐘 / 次)	總時間 (分鐘 / 星期)

Motor / Physical	
1. 步行	7. 跳繩
2. 耍太極 / 六通拳	8. 打波
3. 做伸展運動 / 郁手郁腳	9. 行山 / 遠足
4. 跑步	10. 釣魚
5. 游水	11. 跳舞
6. 做健身	12. 其他

Total (次數) : _____ total (時間) : _____

3a. 閒暇活動情況及習慣 (Leisure Activities Checklist)

而家我會問你一 D 問題，係關於您而家既一 D 生活習慣或嗜好，你盡量回答就得架喇。請你講出 / 介紹你自己**最喜歡及最投入既嗜好**或者**生活習慣**。 出示提示咭（三）

過去一個月內

活動	頻率 (次 / 星期)	時段 (分鐘 / 次)	總時間 (分鐘 / 星期)

total (次數) : _____ total (時間) : _____

3b. Learning new skills

過去一年你曾參與任何形式的興趣班或課程以學習一些新事物啊？

學新事	頻率 (次 / 星期)	時段 (分鐘 / 次)	總時間 (分鐘 / 星期)

學新事 Learning new things	
1. 耍太極	7. 唱大戲
2. 健康舞或舞蹈	8. 書法
3. 識字班	9. 畫畫
4. 學語文 (普通話)	10. 映相
5. 學語文 (英文)	11. 編織
6. 盆栽園藝	12. 其他

total (次數): _____

total (時間): _____

2)

a. 你對參與興趣班或學習一些新的知識、技能的興趣係？	非常小 (1)	都幾小 (2)	都幾大 (3)	非常大 (4)
-----------------------------	------------	------------	------------	------------

- 3) 你有沒有宗教信仰?
- ☐ 沒有 (拜祖先不算是宗教信仰)
- ☐ 有 基督教／天主教／佛教／回教／道教／其他 _____

(如有宗教信仰) 每月平均參與宗教活動多少次? _____

a. 你認為你對宗教的參與程度係:	非常少參與 (1)	間中有參與 (2)	常常參與 (3)	非常多參與 (4)
b. 你認為你是對宗教的虔誠程度係:	非常虔誠 (1)	尙算虔誠 (2)	不太虔誠 (3)	非常不虔誠 (4)

4a. Diener’ s Life Satisfaction Scale

以下係一 d 形容你對生活睇法既句子，請用以下的尺度表示你對下列句子同意或不同意的程度。所有答案均無對錯之分，你只需要將你的真正想法表達出來。**出示提示咭（四）**

	非常唔同意	唔同意	有點唔同意	無意見	有點同意	同意	非常同意
1. 在很多方面，你的生活都接近理想。	1	2	3	4	5	6	7
2. 你的生活在各方面都很好。	1	2	3	4	5	6	7
3. 你對生活感到滿意。	1	2	3	4	5	6	7
4. 現在你已得到了生命裡面最重要既東西。	1	2	3	4	5	6	7
5. 如果畀你再活多一次，你希望保持今世的生活唔改變。	1	2	3	4	5	6	7

4b. Andrew’ s Single Item D-T Scale

出示提示咭（五）

1. 總括來說，到現在為止，你的一生如何？	1	2	3	4	5	6	7
-----------------------	---	---	---	---	---	---	---

5. Life Orientation Scale

而家會問你一D你對生活既睇法。請用以下的尺度表示你對下列句子同意或者唔同意程度。所有答案均無對錯之分，你只需要將你的真正想法表達出來。**出示提示咭（六）**

	非常 唔同意	不同意	無意見	同意	非常 同意
1. 當情況未定的時候，你通常假設最好既後果會發生。	1	2	3	4	5
2. 你很容易去放鬆自己。	1	2	3	4	5
3. 如果 d 衰野要發生，佢係避唔開既。	1	2	3	4	5
4. 你相信明天會更好。	1	2	3	4	5
5. 你十分喜歡你的朋友。	1	2	3	4	5
6. 忙碌的生活對你很重要。	1	2	3	4	5
7. 你很少想過事情會好似你預計咁發生。	1	2	3	4	5
8. 你不容易感到煩亂。	1	2	3	4	5
9. 你好少期望好事會發生係你身上。	1	2	3	4	5
10. 總括來說，你預期你遇到既事會係好多過壞。	1	2	3	4	5

6.Rosenberg Self-Esteem Scale

而家會問你一D你對自己既睇法，請就你個人情況，按合適的程度評分。**出示提示咭（七）**

	非常 唔同意	唔同意	不同意	非常 同意
1. 很多時，我認為自己一無是處。	1	2	3	4
2. 我很多時覺得自己很無用。	1	2	3	4
3. 我對於自己是抱著肯定(正面)的態度。	1	2	3	4
4. 我認為自己是個有價值的人，至少基本上是與別人相等的。	1	2	3	4
5. 總括來說，我覺得我是一個失敗者。	1	2	3	4
6. 我覺得我沒有什麼值得驕傲 (或別人稱讚)。	1	2	3	4
7. 我做事的能力和大部份人一樣好。	1	2	3	4
8. 總括而言，我很滿意自己。	1	2	3	4
9. 我希望我能更睇重(重視)自己。	1	2	3	4
10. 我覺得我有很多好的特質。	1	2	3	4

7. Self-construal Scale

請按照以下之 7 點，選出最能反映你對每句子的同意程度，並填寫於左邊空格上。
出示提示咭（八）

	非常 唔 同意	唔 同意	有點 唔 同意	無 意見	有點 同意	同 意	非常 同意
Kwan & Bond’ s research							
1. 在我作出重要決定前，我會與其他人商議。	1	2	3	4	5	6	7
2. 我會與家人商量一些與家庭有關的事情。	1	2	3	4	5	6	7
3. 我寧願倚賴自己也不倚賴他人。	1	2	3	4	5	6	7
4. 我會爲了我朋友的利益而犧牲我自己的利益。	1	2	3	4	5	6	7
5. 即使困難重重，我也會留在我的家庭。	1	2	3	4	5	6	7
6. 我尊重我朋友所作的決定。	1	2	3	4	5	6	7
7. 我會盡力保持我的家庭和諧。	1	2	3	4	5	6	7
8. 即使是不方便，我也會幫助我的朋友。	1	2	3	4	5	6	7
9. 我在生活上會遵守傳統和習俗。	1	2	3	4	5	6	7
10. 我嘗試不倚賴他人。	1	2	3	4	5	6	7
11. 我對我自己的行動負責任。	1	2	3	4	5	6	7
12. 在做任何事情前，與別人商量及聽取他們的意見是較好的。	1	2	3	4	5	6	7
13. 我常常覺得同其他人既關係比我自已既成就更加重要。	1	2	3	4	5	6	7
14. 對我來說，成爲一個行事獨立的人是重要的。	1	2	3	4	5	6	7
15. 我的將來應由我自己來決定。	1	2	3	4	5	6	7
Singelis 1994							
16. 我很尊重與我相處的一些權威人士，如醫生或社工。	1	2	3	4	5	6	7
17. 對我來說，與別人維持和諧的關係是重要的。	1	2	3	4	5	6	7
18. 只要身邊的人快樂，我便會感到快樂。	1	2	3	4	5	6	7
	非常 唔 同意	唔 同意	有點 唔 同意	無 意見	有點 同意	同 意	非常 同意
19. 我會爲了我家人的利益而犧牲我自己的利益。	1	2	3	4	5	6	7
20. 對我來說，能夠照顧自己是非常重要的。	1	2	3	4	5	6	7
21. 對我來說，健康比起任何東西都重要。	1	2	3	4	5	6	7
Hui’ s research (INDCOL scale)							
22. 夫婦二人每天都應該各有獨自的時間，不受對方打擾。	1	2	3	4	5	6	7

23. 夫婦倆各有自己的銀行存款，勝過同用同一個銀行戶口。	1	2	3	4	5	6	7
24. 子承父業，理所當然。	1	2	3	4	5	6	7
25. 如果有親戚說他生活有困難，我會盡力相助。	1	2	3	4	5	6	7
26. 如果我惹上什麼麻煩事，親戚一定相助。	1	2	3	4	5	6	7
27. 鄰居的情緒時常影響我。	1	2	3	4	5	6	7
28. 沒有興趣知道左鄰右里究竟是怎樣的人。	1	2	3	4	5	6	7
29. 每天與鄰居見見面，聊聊天，是一件樂事。	1	2	3	4	5	6	7
30. 我喜歡住在好朋友家附近的地方。	1	2	3	4	5	6	7
New items designed by me	1	2	3	4	5	6	7
31. 我享受與朋友一起的時間多於獨處。							
32. 對我來說，成爲一個受歡迎的人是重要的。	1	2	3	4	5	6	7
33. 我重視別人怎樣看我。	1	2	3	4	5	6	7
34. 朋友對我的生活來說，是非常重要的。	1	2	3	4	5	6	7

10. Relationship Harmony

請你講出對你哩講，**最重要的五段人際關係**。請講出他們與你的關係，以及他們的稱呼或性氏、性別。也請你講出你和他們之間的**和諧程度**。答案無對錯之分，只要坦白咁講就得架啦。**出示提示咭（九）**

				和諧程度						
				低<----->高						
	關係	稱呼或性氏	性別	非常低	幾低	低	一般	高	幾高	非常高
一				1	2	3	4	5	6	7
二				1	2	3	4	5	6	7
三				1	2	3	4	5	6	7
四				1	2	3	4	5	6	7
五				1	2	3	4	5	6	7

11. Role involvement

關係	見面 次數 (次/月)	講電話 次數 (次/月)	平時你會同佢一齊做 d 咩？ (請列出)		你會為/幫佢做 d 咩？ (請列出)	
一			1.	3.	1.	3.
			2.	4.	2.	4.
二			1.	3.	1.	3.
			2.	4.	2.	4.
三			1.	3.	1.	3.
			2.	4.	2.	4.
四			1.	3.	1.	3.
			2.	4.	2.	4.
五			1.	3.	1.	3.
			2.	4.	2.	4.

Total : _____ (together)

Total : _____ (help)

他 / 她是否住在香港？

你會幾耐與他 / 她見面？

1. 每日都見
2. 一星期四至六次
3. 一星期兩至三次
4. 一星期一次
5. 兩星期一次
6. 一個月一次
7. 三個月一次
8. 一年兩次
9. 一年一次
10. 少於一年一次

你會幾耐與他 / 她傾電話？

1. 每日都傾
2. 一星期四至六次
3. 一星期兩至三次
4. 一星期一次
5. 一個月兩至三次
6. 一個月一次
7. 三個月一次
8. 一年兩次
9. 一年一次

10. 少於一年一次

12.Sense of belonging

請按照以下之 7 點，選出最能反映你對每句子的同意程度，並填寫於左邊空格上。出示提示咭（八）

	非常 唔 同意	唔 同意	有點 唔 同意	無 意見	有點 同意	同意	非常 同意
1. 對於現正參與的群體、組織或中心，我有一份強烈的歸屬感。	1	2	3	4	5	6	7
2. 別人常常接受及看重我的意見。	1	2	3	4	5	6	7
3. 我常覺得自己與別人沒有共同的話題。	1	2	3	4	5	6	7
4. 別人有困難的時候，他們會找我幫忙。	1	2	3	4	5	6	7
5. 我在朋友間擔當一個重要的角色。	1	2	3	4	5	6	7
6. 在群體中，我常常有被忽視的感覺。	1	2	3	4	5	6	7
7. 我和我的朋友具有相似興趣與生活模式。	1	2	3	4	5	6	7
8. 我的背景和經驗與別人的非常不同。	1	2	3	4	5	6	7
9. 我很喜歡現在社會上的文化與傳統。	1	2	3	4	5	6	7
10. 我和其他人具有非常不同的生活態度。	1	2	3	4	5	6	7
11. 我喜歡我的朋友。	1	2	3	4	5	6	7
12. 我享受和我朋友一起的時間。	1	2	3	4	5	6	7
13. 如果我不出現一段時間，別人常常會很掛念我。	1	2	3	4	5	6	7
14. 當我發覺和別人不同時，我感到非常困擾。	1	2	3	4	5	6	7
15. 我與其他人持有相似的價值觀及人生觀。	1	2	3	4	5	6	7

13a. Self - report health status 出示提示咭（十）

1. 總括來說，你認為你的健康狀況是：	極好 (1)	很好 (2)	好 (3)	一般 (4)	差 (5)
2. 和一年前比較，你認為你目前全面的健康狀況如何？	比一年前 好多了 (1)	比一年 前好一些 (2)	和一年前 差不多 (3)	比一年前 差一些 (4)	比一年前 差多了 (5)
3. 和一年後比較，你認為你將來全面的健康狀況如何？	比現在 好多了 (1)	比現在 好一些 (2)	和現在 差不多 (3)	比現在 差一些 (4)	比現在 差多了 (5)

13b. Health Problems Checklist

你曾否患有以下疾病？

	曾	不曾		曾	不曾
1. 心臟病			11. 肺結核或肺病		
2. 高血壓			12. 肝病		
3. 中風			13. 腎病		
4. 關節炎或風濕病			14. 癌病		
5. 骨刺			15. 甲狀腺或內分泌失調		
6. 糖尿病			16. 青光眼		
7. 貧血			17. 耳鼻喉病		
8. 哮喘			18. 皮膚病		
9. 小兒麻痺或腦麻痺					
10. 胃病或胃腸道潰瘍					

1. 頭部曾否受創？ 曾／否 如有，請註明_____
2. 視覺有否出現問題？ 是／否 如有，請註明_____
3. 聽覺有否出現問題？ 是／否 如有，請註明_____

若日後舉辦類似的記憶測試及活動，你有興趣參與嗎？ 有 / 沒有

日後可以用以上的聯絡電話聯絡到你，告訴你有關我們的活動嗎？ 可以 / 不可以
謝謝你的參與！這是我們的紀念品，謝謝你！

備註:_____

CUHK Libraries



003871472